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1 NOTE

Keys may be protected and only available after input of a suitable password.
Information to modify this, is explained in this manual.

COLOUR VIDEO MONITOR

CVM 2037 & CVM 2051

INSTRUCTION MANUAL

Including PAL, NTSC & PAL/SECAM Decoders

Serial Number : Serial NR : 5616090
Part Nr.: V9514210
CVM2037
IH **EBU** **PAL B**

This manual complies with Software Version 2.X

Edition : 22 September 1993

CVM 2037
CVM 2051

CONFIDENTIAL

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This manual complies with Software Version 2.X

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INTRODUCTION & CONTENTS

Introduction

This manual must help you to use and maintain correctly the broadcast monitors CVM 2037 and CVM 2051.

Contents

Introduction & Contents i-/
Specifications 1
Installation 6
Outside terminals and switches 7
Operation 9
- Front panel indicators 9
- Control function keys 10
- Command keys 11
- Colour temperature selection 15
- MENU 16
  - Menu 16
  - Keyboard extension 18
  - Monitor configuration 19
  - Status (Preset input X) 22
  - Alignment 23
    - Manual with internal signal 24
    - Automatic with Thoma 25
    - Automatic with BARCO probe 26
    - **Manual with live picture** 27
    - Automenu 30
    - Service page 31
  - Remote Control 33
  - Geometry 34
  - Privilege Setting 37

Adjustments 38
Spare parts for CVM2037
Spare parts for CVM2051
Schematics
- Mains Input
- Switched Mode Power Supply
- ENT & Deflection
- Control
- Decoder & RGB amplifier
- CRT Socket
- Backboard
- Option : Analog Component Input Module

SERVICE SAFETY PRECAUTIONS

WARNING: X-RADIATION

X-RADIATION CAN BE CAUSED IF CRITICAL COMPONENTS ARE REPLACED BY NON-CONFORM COMPONENTS. THESE COMPONENTS ARE MARKED IN THIS SERVICE MANUAL BY AN * .

WARNING: SAFETY

ELECTRIC SHOCK OR FIRE HAZARD CAN BE CAUSED IF CRITICAL COMPONENTS ARE REPLACED BY NON-CONFORM COMPONENTS. THESE COMPONENTS ARE MARKED IN THIS GUIDE BY A ,L SIGN.

REPLACE WITH CONFORM TYPES ONLY !

1. Comply with all caution and safety-related notes on or inside the instrument cabinet, on the chassis, or on the picture tube.

2. When service is required, maintain correct lead dress and parts placement. Extra precaution should be taken to assure proper lead dress in the High Voltage circuit area.
Where a malfunction has occurred, those components or drcuits that indicate evidence of abnormality should be replaced or corrected. Always use the manufacturer's safety specified replacement components.

3. Do not remove, install or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away when picture tubes are handled. Keep the picture tube away from the body while handling.

4. Protective shields are provided on this chassis for the protection of both the service technician and the costumer.
Protection shields removed for service convenience must be re-installed correctly and ANY MISSING SHIELD MUST BE REPLACED. DO NOT OPERATE THIS INSTRUMENT WITHOUT THE PROTECTIVE SHIELDS IN POSITION AND PROPERLY SECURED.

5. After any service intervention, the service technician must be sure that no protective device built into the instrument by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks are recommended for the continued protection of the costumer and service technician.

GROUNDING CONTINUITY TEST

- Remove main plugs from wall outlet.

- With an ohm-meter in its lowest resistance range, measure resistance between the grounding prong of the mains plug and all accessible conductive parts.
THE METER MUST BE READ ZERO OHM.

- The mains plug still being removed from the wall outlet, switch on the instument.
- Switch an ohm-meter in its highest resistance range, measure resistance between the grounding prong of the mains plug and the two other prongs of the mains plug.
BOTH METER READINGS HAVE TO BE MORE THAN 5 MEGOHM (5 Mohm).
ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE THE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND CORRECTIVE ACTION MUST BE TAKEN BEFORE RETURNING THE INSTRUMENT TO THE COSTUMER.

X-RADIATION AND HIGH-VOLTAGE LIMITS

The primary source of X-radiation in solid state display units is the picture tube. The picture tube is specially constructed to limit X-radiation emissions. The shields and mounting hardware for picture tubes have an X-radiation protection function and must be properly in place.
For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter. High voltage is maintained within specified limits by the use of dose tolerance safety components/adjustments in the power supply drcuit. Refer to an X-radiation warning note on the Chassis Schematic and Labels in the Basic Service Data for specific high-voltage chassis and X-radiation Protection Circuits. If high voltage limits, check each component spedfied in the diagram and take necessary corrective action.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in display units have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by then necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these spedal safety characteristics are identified in this Data and its Supplements and Bulletins. Electrical components having such features are identified by A or * on the schematics and on the parts lists in this Data and its Supplements and Bulletins. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts lists in this Data and its radiation.

NOTE **FOR USERS IN THE UNITED KINGDOM :**

IMPORTANT:
The wires of the mains lead are coloured in accordance with the following code:

Green and Yellow: EARTH
Blue: LIVE
Brown: NEUTRAL
Plug fusing value: 5 A

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured **markings** identifying the terminals in your plug, proceed as follows:
- **The wire** which is coloured Green and Yellow must be connected to the terminal in the plug which **is marked** by the letter E of by the safety earth symbol =6 or coloured Green and Yellow.
The wire which is coloured Blue must be connected to the terminal which is marked with the letter **N or** coloured Black.
The wire which is coloured Brown must be connected to the terminal which is marked with the eur L or coloured Red.

WARNING : This apparatus must be earthed.

DIESES TECHNISCHE HANDBUCH
SO LLTE SORGFALTIG GELESEN WERDEN
BEVOR DIE NETZSPANNUNG ANGELEGT WIRD

ACHTUNG RONTGENSTRAHLUNG !!

ERHOHTE RONTGENSTRAHLUNG KANN VERURSACHT WERDEN, WENN BESTIMMTE BAUTEILE DURCH TEILE ERSETZT WERDEN DIE NICHT DER SPEZIFIKATION DES HERSTELLERS ENTSPRECHEN. SOLCHE BAUTEILE SIND IN DIESER WARTUNGSANLEITUNG DURCH EIN * GEKENNZEICHNET.

ACHTUNG SICHERHEIT !!

WERDEN BESTIMMTE BAUTEILE DURCH TEILE ERSETZT, DIE NICHT DER SPEZIFIKATION DES HERSTELLERS ENTSPRECHEN, SO KANN EIN ELEKTRISCHER SCHLAG ODER BRANDGEFAHR DIE FOLGE SEIN. SOLCHE BAUTEILE SIND IN DIESER WARTUNGSANLEITUNG DURCH EIN GEKENNZEICHNET.

WARTUNG
VOR DEM OFFNEN DES MONITORS
1ST DIESER AB ZU SCHALTEN

1. Samtliche Sicherheitsvorschriften auf der AuBen- oder Innenseite des Gerates bzw. auf der Bildrohre sind zu beachten.

2. 1st eine Wartung erforderlich, so ist die richtige Verdrahtung und die korrekte Einbaulage der Teile zu beachten.
   Es ist besonders darauf zu achten, daB im Hochspannungsbereich eine korrekte Lage gewahrleistet bleibt. Nur solche Ersatzteile verwenden, die der Spezifikation gemaf3 den Sicherheitsvorschriften des Herstellers entsprechen.

3. Vor dem Ausbau der Bildrohre ist die Anodenleitung und die Anode der Bildrohre gegen den Chassisrahmen zu erden, damit eine vorhandene Ladung abgeleitet werden kann.
   Beim Aus- oder Einbau oder bei sonstiger Handhabung der Bildrohre muf3 eine Schutzbrille getragen werden. Wer keine derartige Schutzbrille tragt, darf sich nicht in den Bereich aufhalten, wo Bildrohren gehandhabt werden.
   Bildrohren sind bei ihrer Handhabung vom Korper weg zu halten.

4. Nach erfolgter Wartung muf3 der Kundendiensttechniker sicher sein daB wahrend der Wartung keine vom Hersteller eingebaute Schutzvorrichtung beschadigt oder unabsichtlich zerstort wurde.

Es empfiehlt sich daher, zum Schutz der Kunder und des Technikers folgende Kontrollen durchzufuhren :

SCHUTZLEITERANSCHLUI3 UND BERUHRUNGSCHUTZ

- Netzstecker aus der Steckdose ziehen.
- Mit einem auf kleinsten Widerstandsbereich eingestellten Ohmmeter den Widerstand zwischer der Erdung des Netzsteckers und alien zuganglichen leitenden Teilen messen.
  AM OHMMETER MUB < 0.1 OHM GEMESSEN WERDEN.

- Bei weiterhin gezogenem Netzstecker, das Gerat einschalten.
- Mit einem auf hachsten Widerstandsbereich eingestellten Ohmmeter den Widerstand zwischen der Erdung des Netzsteckers und den beiden anderen Stiften des Netzsteckers messen.
  ES MUSSEN JEWEILS MEHR ALS 5 MEGOHM ABGELESEN WERDEN.

ERGEBEN DIE MESSUNGEN ABWEICHENDE WERTE, SO KONNTE DAS AUF EINE GEFAHRLICHE BERUHRUNGSSPANNUNG HINDEUTEN, SODAB ABHILFE GESCHAFFEN WERDEN MUB, BEVOR MAN DAS GERAT DEM KUNDEN ZURUCKGIBT.

Die Bildrohre ist Hauptverursacher von Röntgenstrahlung.
Sie hat eine besondere Bauform urn die Röntgenstrahlung auf ein Mindestmaf3 zu begrenzen.
Die Ersatzrohre muf3 vom gleichen Typ sein wie die Originalrohre, damit ein dauerhafter Schutz vor Rontgenstrahlen gewahrleistet ist.
Durch den Einbau von besonders mallgenauen Sicherheits Bauteilen / Abgleichungen im Netzteil wird die Hochspannung innerhalb der angegebenen Grenzwerte gehalten.
Die fur Techniker bestimmte warnende Hinweise im Schaltbild, bezuglich der Rontgenstrahlung sowie die bei jedem Gerat aufgefOhrten Hochspannungsgrenzwerte sind zu beachten.
Liegen die Hochspannungswerte Ober den dort aufgeffihrten Hochstwerten, so muf3 jedes im Schaltbild spezifizierte Bauteil kontrolliert- und die notige Abhilfe geschaffen werden.

Viele elektrische und mechanische Teile haben besondere Sicherheitsmerkmale. Bauteile die zu dieser Sicherheitskategorie gehoren sind in den Schaltbildern und in der StOckliste dieser Wartungsanleitung sowie in den Nachtragen und Technischen Informationen mit einem A bzw. * versehen.
Der Einsatz von Ersatzteilen, die nicht den Sicherheitsauflagen, denen die Ersatzteile der Stuckliste dieser Anleitung, der dazugehorigen Nachtrage und technischen Informationen unterliegen, genOgen, kann einen elektrischen Schlag, Brand oder eine ObermaBige Rontgenstrahlung zur Folge haben.

ACHTUNG : DIESES GERAT MUB GEERDET WERDEN !!

CAUTION : HIGH VACUUM PICTURE TUBE

IS DANGEROUS TO HANDLE.
REFER PLACEMENT TO QUALIFIED SERVICE PERSONNEL.

EMPLOYS X-RADIATION AND INTEGRAL IMPLOSION PROTECTION.
REPLACE WITH A TUBE OF THE SAME TYPE NUMBER AND SUFFIX FOR CONTINUED SAFETY.

X RADIATION WARNING

REPLACEMENT OF CRITICAL COMPONENTS OF THIS APPARATUS (PICTURE TUBE AND OTHERS) CAN RESULT IN EXCESSIVE X RADIATION.
THESE COMPONENTS ARE MARKED IN THE SERVICE MANUAL BY AN * .
- REPLACE ONLY WITH CONFORM TYPES
- SEE SERVICE MANUAL FOR HIGH VOLTAGE ADJUSTMENTS INSTRUCTIONS.

CAUTION : TO DETERMINE THE PRESENCE OF HIGH VOLTAGE, TUBE HIGH VOLTAGES MUST BE DISCHARGED TO CHASSIS.

ACHTUNG

Die in diesem Gerat erzeugte Rontgenstrahlung ist ausreichend abgeschirmt.
Beschleunigungsspannung maximal kV .
Ersatz bestimmter Bauteile kann erhohte Reintgenstrahlung verursachen. Diese Bauteile sind deshalb in der Bedienungs-anleiting mit einen * gekennzeichnet. Nur durch baugleiche Bauteile zu ersetzen!
Zulass. Nummer : BW / / RO

Serial number:

Beam current:

Date: 3 °

EHT: C

CVM 2037
CVM 2051

SPECIFICATIONS

Introduction on the CVM20XX

The CVM20XX is a high performance monitor, available in 2 sizes : 14 V (37 cm) and 20 V (51 cm). The monitor is fully micro-processor controlled.
The CVM20XX is characterized especially by its outstanding raster size and colour temperature stability. Automatic colour temperature alignment is standard equipped (for use with optional THOMA Colour Analyzer and BARCO Light Probe).

Special features

Affordable intelligence

Easy operation and alignment by help of an on-screen display. The CVM20XX has a build-in character generator.

Faster and more accurate picture matching.
The CVM20XX has both a calibrated and preset control memory for all display parameters and control functions. Fast and easy control of monitor walls is the result.

Full remote control.
All display parameters and functions can be controlled remotely. You have the choice of two options: Single Remote Control for simultaneous control of up to 12 monitors, or Multi-Monitor Remote Controller for up to 48 monitors, both CVS/CVM-A/CVM20XX compatible. Monitors can be addressed individually, per group or in total.

Configuration flexibility.
The CVM20XX has an option slot and is fully software driven. Consequently it accepts optional plug-in modules. There is normally an analog component input module in it but it can also be a digital input module.

Excellent colourtemperature and raster size stability

The AKB-circuitry (Automatic Kinescope biasing) allows you to maintain colour temperature independent of tube-ageing and ambient temperature fluctuations.
The CVM20XX features excellent raster size stability even under extreme brightness levels.

Fully modulardesign

No active components in the mainframe.

SPECIFICATIONS (continued)

Standard features

PAL (NOTCH) or NTSC (COMB) or PAUSECAM decoder

Input configuration :
- 3 coded inputs or 2 coded inputs and 1 external sync. input (loop through and floating)
- RGB(S)
- Y / R-Y / B-Y or Y/C inputs
- audio input

Loudspeaker output

Fast / slow sync time constant

RGB switches / blue only

Size (underscan / overscan)

16/9 and 4/3 aspect ratios

H/V delay and pulse cross

3 standard colour temperatures 3200 K, 6500 K and 9300 K
2 user pre-selectable colour temperatures A and B

Aperture control

Monochrome switch : colour / monochrome filtered / monochrome full bandwidth

Automatic and manual degaussing

Scan failure protection

2 Tally lights

Options

Digital D1/D2 interfaces for serial (270 Mbit) and parallel inputs

THOMA Colour Analyzer for automatic colour temperature alignment

BARCO Light Probe for automatic colour temperature alignment

Single Remote Control (simultaneous control of up to 12 monitors)

Multi-Monitor Remote Controller (individual or simultaneous control of up to 48 monitors)

Rack mount kit with slides (one kit for CVM2037, another for CVM2051)

SPECIFICATIONS (continued)

Technical specifications

Mains power

Line voltage (nom.)	117/220 Vac +15%/-20% autoranging
Line frequency	48 Hz to 100 Hz
Power consumption (typ.)	120 W

Scanning

Systems	625 lines / 50 fields / interlaced 525 lines / 60 fields / interlaced

Color systems

PAL B (notch filter decoder) or NTSC 3.58 (Comb filter decoder) or PAL/SECAM decoder

Display performance

Normal scan	aspect ratio 4/3 blanked scan +1.5%
Underscan	aspect ratio 4/3 corners in
Linearity and geometry	2% of height
Colour temperatures	6500 K, 3200 K, 9300 K and two user values A and B

Flatness of video amplifiers, measured from input to the cathodes of the CRT at nom. input voltage and in calibrated position. Valid for RGB amplifiers and for decoders in monochrome mode (notch filter switched off) or comb mode (NTSC only), reference 1 MHz :

100 kHz to 5 MHz (0 to 5 MHz)
Smooth roll off above 5 MHz

Input specification

Input	Signal/Format		Level	Connector type
INPUT 1	Composite Non-composite		1 Vpp +3/-6 dB 0.7 Vpp +3/-6 dB	2 x BNC + termination switch loop through and floating
INPUT 2	Composite Non-composite		1 Vpp +3/-6 dB 0.7 Vpp +3/-6 dB	2 x BNC + termination switch loop through and floating
INPUT 3 (switchable)	Composite Non-composite		1 Vpp +3/-6 dB 0.7 Vpp +3/-6 dB	2 x BNC + termination switch loop through and floating
or SYNC	Ext. sync (neg. going)		4 Vpp +6/-20 dB	
R	Red composite Red non-composite		1 Vpp ±6 dB 0.7 Vpp ±6 dB	2 x BNC + termination switch loop through and floating
R-Y	R-Y non-composite		0.7 Vpp ±6 dB	
C	C	PAL	0.3 Vpp ±6 dB	
		NTSC	0.286 Vpp ±6 dB	
G	Green composite Green non-composite		1 Vpp ±6 dB 0.7 Vpp ±6 dB	2 x BNC + termination switch loop through and floating
Y	Y composite Y non-composite		1 Vpp ±6 dB 0.7 Vpp ±6 dB	
B	Blue composite Blue non-composite		1 Vpp ±6 dB 0.7 Vpp ±6 dB	2 x BNC + termination switch loop through and floating
B-Y	B-Y non-composite		0.7 Vpp ±6 dB	
SYNC	Ext sync (neg. going)		4 Vpp +6/-15 dB	2 x BNC + termination switch loop through and floating
AUDIO			1.5 Vpp	XLR 3-pin, asymm., high-imp.
Return loss on all video connectors			40 dB / 5.5 MHz / 75 ohms	

SPECIFICATIONS (continued)

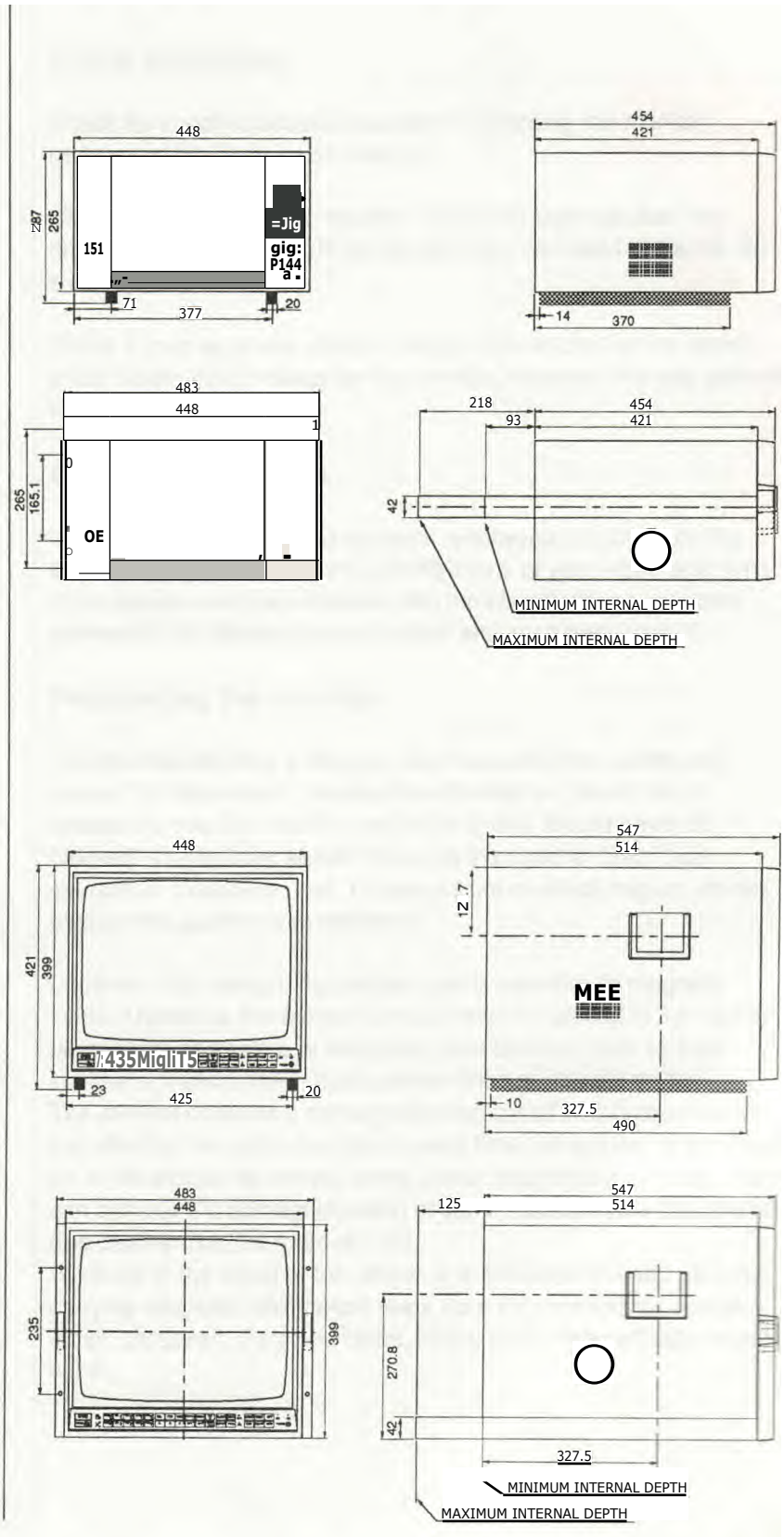
CRT
parameters

	CVM 2037 IH	CVM 2051IM
CRT SIZE	37cm/14"	51 cm / 20"
CRT type	dot in-line	dot in-line
Pitch	0.31	0.43
Phosphors	EBU / ASP	EBU / ASP
Centre resolution (TV lines)	680	700
Max. convergence error		
Centre	0.2 mm	0.2 mm
Zone 1 (typical)	0.3 mm	0.4 mm
Rest	0.6 mm	0.7 mm
Active screen area	mm /inch	mm /inch
Width	266.5 / 10.49	385 / 15.16
Height	200 / 7.78	288.75 / 11.37
Display area	cm^2 / sq.inch	cm^2 / sq.inch
	533 / 82.56	1111.69 / 172.37

continued on next page

SPECIFICATIONS (continued)

Dimensions



INSTALLATION

Visual inspection

Check for supplied accessories when unpacking the monitor : mains cord and instruction manual.

Before installation of the monitor, inspect for damage that may have occurred in transit. If the monitor was damaged in transit, file a claim with the carrier.

Check if your ac power source voltage corresponds to the appropriate power input voltage for the monitor, noted on the rear side of the monitor.

Check input signals

In order to obtain a correct and well synchronized picture on the screen, first check also if the specifications of your video and sync input signals are in accordance with the specifications or factory settings of the display (colour system and scan frequencies).

Positioning the monitor

The monitor requires a free flow of air around it for cooling purposes. For this reason, covers should never be placed on or around the monitor and the ventilation grilles should never be blocked. The monitor should never be exposed to direct heat sources or excessive dust. To prevent fire or shock hazard, do not expose this appliance to moisture.

Because of its design, the picture tube is sensitive to magnetic fields. Therefore, the monitor should never be placed in the vicinity of magnets or sources of magnetic disturbances, such as loudspeakers, transformers, heavy power lines or electric motors.
The monitor contains a demagnetisation circuit which counteracts the effect of the earth magnetism each time the monitor is switched on. If the monitor is moved, some colour impurities may occur. You can activate the demagnetisation circuit by pressing the DEC switch (the display must be switched on).
Because of the effect of this circuit, it is advisable to keep all items carrying magnetic information away from the monitor, for example music cassettes, magnetic tapes, floppy discs, magnetically coded cards.

CVM n3

OUTSIDE TERMINALS & SWITCHES

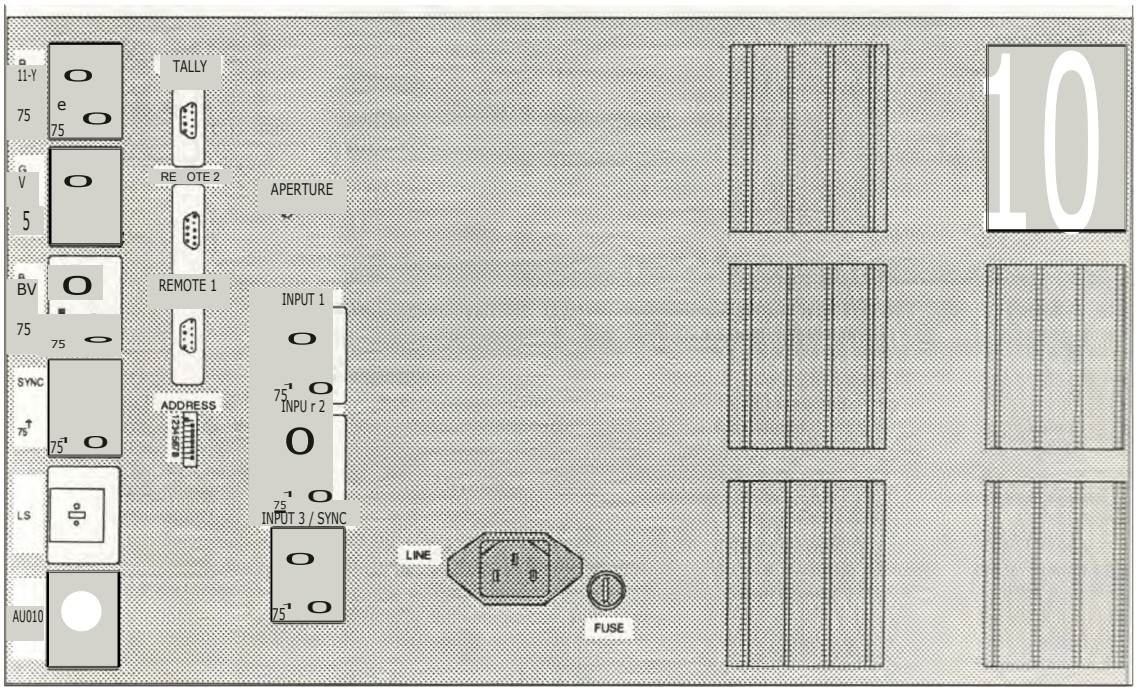
POWER ON / OFF (on front side)
Push-push button to turn the monitor on (pushed in) and off (released).

LINE
Line input.
CAUTION : before connection, check for correct line voltage as noted on the rear side of the monitor.

FUSE
Fuse holder.
For the 120 Vac range, use a 4A SS fuse (6 x 32 mm, 4A, slow blowing).
For the 220 Vac range, use a 2AT fuse (5 x 20 mm), 2A, slow blowing.

INPUT 1 INPUT 2 INPUT 3 / SYNC
Looped through composite video inputs (BNC type).
In case external sync is selected, INPUT 3 is for composite sync input.
Each input is provided with an internal 75 ohms termination resistor. Set the 75 ohms switch in upward position for termination.

TALLY
9-pin female receptacle for remote control of the tally lights on the front side of the monitor. The connection is CVS compatible.



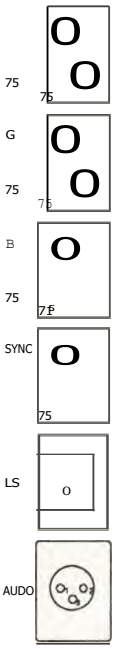
OUTSIDE TERMINALS & SWITCHES (continued)



REMOTE 2 REMOTE 1
Female and male 9-pins receptacles for remote control. MMRC and CVS compatible.
Permits different ways of remote control, using a :

SRC (Single Remote Controller) for full remote control of one monitor via REMOTE 1 connector — available.
MMRC (Multi Monitor Remote Controller) for full remote control of up to 48 CVS and/or CVM monitors — available.

- Your own remote control solution (RS232) — info available.
RIS (Remote Input Selector), limited to input selection and function switching — not available. Refer to the description of menu item 4 (Ris configuration) in this manual.



CHANNEL A CHANNEL B CHANNEL C SYNC
Looped through inputs for component signals (BNC type).
The input formats are noted on the rear side panel. See also the Specification Section of this manual for more information.
Each input is provided with an internal 75 ohms termination resistor. Set the 75 ohms switch in upward position for termination.

LS
Loudspeaker output (DIN type).
There are two ways to connect the external loudspeaker.
The first one is plugging the connector with its round pin upwards. Then the internal loudspeaker is enabled and in parallel with the external one.
The other way is plugging the connector with its round pin downwards. Then, the internal loudspeaker is switched off.

AUDIO
Audio input (XLR connector).
Pin 2 is input and pin 3 is ground.

Notethat the monitorcan have a digital input module instead of an analog component one. More information on this module can be found in the manual called CVM2037/2051 D1/D2 Serial/Parallel Decoder.

CVM 2037
CVM 2051

FRONT PANEL INDICATORS



TALLY LIGHTS
Two tally lights, a red one on the left and a green one on the right. The tally lights are controlled via the 9-pin connector named TALLY on the rear side of the CVM.

COMP INP (ANALOG COMPONENTor DIGITAL INPUT)
Green LED which lights up when the component (Optional) input is selected.

SYNC (INTERNAL / EXTERNAL SYNC)
Green LED which lights up when external synchronization is selected.

SL/F (SLOW / FAST)
Green LED which lights up when the fast sync time constant is selected.

INP1, INP2, INP3 (INPUT 1, INPUT 2, INPUT 3)
Green LEDS which light up when the respective input has been selected.

GEO (GEOMETRY OVERLAY)
GEO
Red LED which lights up when the keyboard is set to GEOMETRY OVERLAY for geometry alignment.

COL (COLOUR OVERLAY)
COL
Red LED which lights up whenever the monitor is set for colour temperature alignment in manual mode or automatic mode (with an optional Light Probe).

MONO
Green LED which lights up when no colour is displayed.

COMB
Green LED which lights up when the comb filter is selected.
The comb filter can only be selected if a NTSC decoder is present in the monitor.

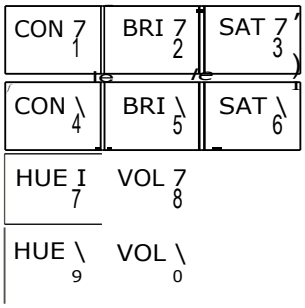
APT (APERTURE CORRECTION)
Green LED which lights up when aperture correction is enabled.

KEY
Green LED which lights up when a key is pressed and accepted (which does not mean that the action is carried out). This LED is lit also in "Function Mode".

LIM
This red LED lights up whenever the upper or lower control range limit is reached during control via the keyboard, e.g. during contrast, brightness and saturation setting

CONTROL FUNCTION KEYS

There are five pairs of control function keys available: for contrast brightness, saturation, hue and volume adjustment.
The controls are monitor related and not input related.
Except for the VOL keys, all the control function keys provide the possibility to act on picture contents.
Pressing such a key causes a direct increase or decrease of the corresponding actual value. Contininous pressing causes a fast increase or decrease (after 5 single steps).
The control value is made visible by means of a horizontal format bar. This format bar disappears automatically from the screen about 30 seconds after the last key-press or when you press **CLEAR.**
The LIM LED lights up whenever the upper or lower control range limit is reached during control via the keyboard.
If you press CAL or **PRE** during control, the monitor is set to calibrated or preset value for all controls. Refer to the description of the CAL and **PRE** command keys.



CON (CONTRAST UP & CONTRAST DOWN)
Two keys for contrast adjustment.
Keys also used for numeric data entry (1 and 4).

BRI (BRIGHTNESS UP & BRIGHTNESS DOWN)
Two keys for brightness adjustment.
Keys also used for numeric data entry (2 and 5).

SAT (SATURATION UP & SATURATION DOWN)
Two keys for saturation adjustment.
Keys also used for numeric data entry (3 and 6).

HUE (HUE UP & HUE DOWN)
Two keys for hue adjusment. Only useful! when a NTSC decoder is present in the monitor.
Keys also used for numeric data entry (7 and 9).

VOL (VOLUME UP AND VOLUME DOWN)
Two keys for volume adjustment.
Keys also used for numeric data entry (8 and 0).

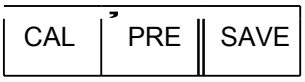
NOTE

Keys may be protected and only available after input of a **suitable password. For howto modifythis, refer to** the **section on PRIVILEGE SETTING in this** manual.

When the keyboard is disabled, following keys are available:

VOL CAL PRE OPT INP1 INP2 INP3 DEG

COMMAND KEYS



CAL
When this key is pressed, all control functions assume calibrated value, and picture will directly modify to calibrated status.
Hereby a list of the functions which are set by the CAL command and **how :**
CON, BRI, SAT, HUE, VOL, R (ON), G (ON), B (ON), SYNC (INTERNAL), SL/F (SLOW), MONO (COLOUR/AUTOMATIC), COMB(OFF), APT (OFF), SIZE (UNDER-SCAN), DEL (NO DELAY), SETUP ELIM. (YES).
In addition, the 6500 K colour temperature is selected.

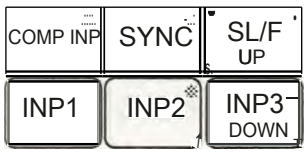
PRE
When this key is pressed, all control functions assume preset values of the selected input and picture contents will directly modify to preset status.
Following functions are set to preset status by pressing **PRE :**
CON, BRI, SAT, HUE, VOL, R, G, B, SYNC, SUE, MONO, COMB, APT, SIZE AND DEL, SETUP ELIM. .
In addition, the preset colour temperature is selected.

SAVE
Command key to memorize the actual status of the monitor as preset status for the selected input. This status is recalled everytime you press **PRE** (except for the functions that are not set by the preset command).
In addition, the actual colour temperature is saved.



R G B (Colour drive)
Three command keys, by the combination of which you can set seven different colour drive modes : rgb, r-only, g-only, b-only, r-off, g-off and b-off.

COMMAND KEYS (continued)



COMP INP (ANALOG COMPONENT OR DIGITAL INPUT)

Analog Component Input Module
Key for the selection of the signals applied to the component inputs. The component input format can be programmed to one of the three following ones: RGB , Y/R-Y/B-Y or S-VHS .
To program the component input format, pass via the KEY-BOARD EXTENSION menu. Refer to the description of this menu in this manual.

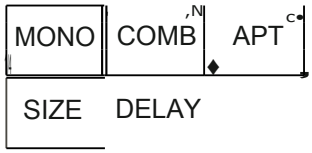
D1 /D2 Digital Input module
When this key is pressed the LED in this key is lit, and also one LED in one of the keys for input selection to show the selected digital input. To turn back to an analog composite input, press again this key **COMP IN.**
To program the digital input format, pass via the KEYBOARD EXTENSION menu. Refer to the description of this menu in this manual.

SYNC
Key for the selection of internal or external synchronization. In case of external sync, the input signal applied to INPUT 3 is used as sync reference.
When external sync is enabled, the green led above left of the SYNC key lights up.

SL/F (SLOW / FAST)
Key for the selection of horizontal sync time constant.
If fast sync is enabled, the green led above left of the SL/F key lights up.
This key is also used to go UP in the menu's.

INP1 INP2 INP3 (INPUT 1 INPUT 2 INPUT 3)
Keys for the selection of one of the standard available composite inputs.
The selected input is identified by an enlighted green LED above the corresponding command key.
If the monitor is set for external sync, INPUT 3 can not be selected.
When a digital input board is installed, these keys are also for input selection after the input **COMP INP** has been selected.
Key **INP3** is also used to go DOWN into the menu's.

COMMAND KEYS (continued)



MONO
Key for the selection between three different colour modes.
If a colour video signal is displayed in colour, consecutive **MONO** key presses permit the selection of :

COLOR OFF / FILTERED
COLOR OFF / FULL BANDWIDTH
COLOR / AUTOMATIC
and so on ...

If a colour video signal is displayed in colour, and the colour signal changes from colour into black and white, the monitor goes into COLOUR OFF / FULL BANDWIDTH mode, and selection is possible between two modes :

COLOR OFF / FILTERED and
COLOR OFF / FULL BANDWIDTH

When colour returns, that mode is enabled which was selected at the instant that colour felt away. Again there's choice between three different colour modes.
When no colour is displayed, the green LED above the MONO key lights up.

COMB
Key to enable or disable the comb filter, in case a NTSC decoder is installed in the monitor.
When the comb filter is enabled, the green LED above the COMB key lights up.

APT
Key to enable or disable aperture correction.
When aperture correction is enabled, the green LED above the APT key lights up. The aperture correction is adjustable by means of a potentiometer on the rear side of the monitor.

SIZE
Key for selection of picture size, between overscan and underscan.

DEL (DELAY)
Key to select between normal picture, horizontally delayed picture or pulse cross. Starting from normal picture, **DEL** key presses give you :

HORIZONTAL DELAY
VERTICAL DELAY
PULSE CROSS
NO DELAY (normal picture)
and so on ...

COMMAND KEYS (continued)

DEG

DEG (DEGAUSS)
Key to manually degauss the monitor.
When turning on the monitor, automatic degaussing is obtained. The DEG key makes immediate degaussing possible, without having to switch off the display. After manual or automatic degaussing, please wait a few minutes before reactivating; only in this way effective degaussing is obtained.

POWER ON / OFF
Push-push button to turn the monitor on (pushed in) and off (released).
When turned on, the monitor starts up with the same status as when turned off the last time.

FUNCTION MODE
You get into "Function Mode" different ways :
- immediately after power-on, or
- when in normal picture mode, after pressing : ENTER or DEG.

In function mode the KEY LED is lit for a few seconds and some numeric keys have a command function :

0 to start entrance of a password
4 (for digital input only) to get a digitally generated Safe Area Display
7 to toggle between 4/3 and 16/9, each time overscan first.

So, if in normal picture mode (no MENU), press :

ENTER 0 before password entrance,
ENTER 4 for a Safe Area Display (digital input only),
ENTER *7* to toggle between 4/3 and 16/9.

4/3-16/9

CVM 2037
CVM 2051

COLOUR TEMPERATURE SELECTION

Five colour temperatures can be selected : 3200 K, 6500 K, 9300 K, A and B (A and B are customer defineable colour temperatures).

There are three ways to select a colour temperature :

1 Press **CAL**. The colour temperature is always set then to 6500 K. Note that the oher control functions will also be set to calibrated value.

2 Press **PRE**. The colour temperature is then the colour temperature choosen as preset colour temperature for the selected input. Note that the other control functions will also be set to preset value. If the preset colour temperature is not the one you want, you first have to change the colour temperature selection via the KEYBOARD extension menu. Refer to the description on this menu.

3 Colour temperature selection via the KEYBOARD EXTENSION menu. Refer to description of this menu.

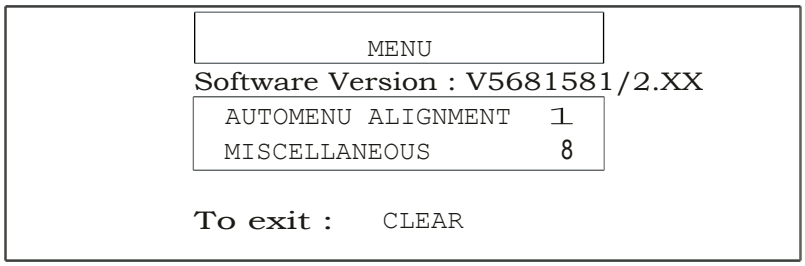
MENU

MENU

MENU provides access to next features :

- Display of the Software Version
- Additional keyboard functions :
  - Colour temperature selection
  - Setup elimination on/off setting (NTSC)
  - Component or digital input format selection
- Configuration setting
- Status report and Preset programming
- Colour temperature alignment :
  - Manual with internal signal
  - Automatic with Thoma
  - Automatic with Barco probe
  - Manually via keyboard
  - Display of adjustment values
- Remote Control settings (address and on/off setting)
- Geometry alignment via keyboard
- Privilege setting (password entrance, enabling & disabling)

When pressing the **MENU** key, eventually after entrance of a password, you get next menu on the screen :



Press 1 to start colour temperature alignment the way it has been selected via AUTOMENU. To know how it has been selected or to modify the selection, refer to the description of AUTOMENU.

Press 8 to get to the other MENU facilities.
See next page for the menu on the screen after pressing 8.

Press 0 (PRIVILEGE SETTING) to enter and enable/disable monitor passwords .

continued on next page

MENU (continued)

```
                MENU
Software Version : V5681581/2.XX
  AUTOMENU ALIGNMENT    1
  KEYBOARD EXTENSION    2
  CONFIGURATION         4
  STATUS (PRESET)       5
  ALIGNMENT             6
  REMOTE CONTROL        7
  GEOMETRY              9

To exit :   CLEAR
```

Press **1** to start automatic colour temperature alignment with Thoma or Barco Light Probe as selected before. To know what has been selected or to modify the selection, refer to the description of AUTOMENU.

Press **2** for colour temperature selection, setup elimination on/off setting (NTSC) and component or digital input format selection.

Press **4** for monitor configuration setting.

Press **5** for status display and preset programming.

Press **6** for everything around colour temperature alignment.

Press **7** for monitor remote control address setting and on/off switching.

Press **9** to align geometry via the keyboard.

Press **0** (PRIVILEGE SETTING) to enter and enable/disable monitor passwords .

The different items are described in full details on the next pages.

KEYBOARD EXTENSION

If an Analog Component Input board is installed and via the Configuration Menu, the input is programmed for "COMPONENT MODULE", you get next Keyboard Extension menu :

```
KEYBOARD EXTENSION

Color Temp.          6500
NTSC setup elim.     YES
Sync Fixed Ext.      NO
Input Format         RGB
To return without saving      CLEAR
To return with saving         ENTER
```

If a Digital Input board is installed and via the Configuration Menu, the input is programmed for "DIGITAL MODULE", you get next Keyboard Extension menu :

```
KEYBOARD EXTENSION

Color Temp.          6500 K
NTSC setup elim.     YES
Input 1 system       D1
Input 2 system       D1
Input 3 system       D2/NTSC
Safe area            OFF
To return without saving :    CLEAR
To return with saving         ENTER
```

Color Temp. :	6500 K / 3200 K / 9300 K / A / B
NTSC setup elim.:	NO / YES Only active when a NTSC signal is applied.
Sync Fixed Ext.:	NO / YES If set YES, the monitor is forced into external synchronization for RGB input.
Input Format :	RGB, Y/R-Y/B-Y, S-VHS
Input X system :	Dl, D2/PAL, D2/NTSC
Safe area :	ON / OFF This is a digitally generated pattern. only available when a digital input is selected.

Press **UP** or **DOWN** to move the red field.
Press **TOGL** to modify data in the red field :
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

The monitor holds the parameters set via the Keyboard Extension till they are modified again. Note that colour temperature selection can also be modified when pressing **CAL** (6500 K) or **PRE .**

MONITOR CONFIGURATION

```
MONITOR CONFIGURATION

PROGRAMMABLE INPUT SELECTION  1
RIS CONFIGURATION             2

To return :   CLEAR
```

Press **1** if you want to let the monitor know what input module is installed in the monitor (analog component or digital).
Press **2** for programming the RIS (Remote Input Selection) configuration. This is to determine what can be remote selected after connection of a small switching network to the REMOTE 2 connector on the rear side of the monitor.

(1) Programmable Input selection

```
MONITOR CONFIGURATION

PROGRAMMABLE INPUT   COMPONENT MODULE

To return without saving :   CLEAR
To return with saving        ENTER
```

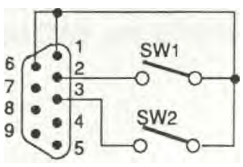
In this menu you can define what kind of input module is installed inside the monitor, an analog component or a digital one. The monitor does not know that automatically.

Press **TooL** to modify data in the red field between :
COMPONENT MODULE / DIGITAL MODULE
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

(2) RIS Configuration

After connection of a small switching network to the REMOTE 2 connector on the rear side of the monitor, it is possible to remote control input selection and/or most of the operation functions.

REMOTE 2



MONITOR CONFIGURATION (continued)

The RIS Configuration Menu looks like this :

```
 RIS CONFIGURATION

Mode selection :   INPUT SWITCHING ONLY
To specify inputs in input switching mode :  0

To return without saving :  CLEAR
To return with saving       ENTER
```

Two modes are available : "INPUT SWITCHING ONLY" and "FUNCTION SWITCHING" . The red field in the menu shows the actual mode. Press **TOGL** to modify it.
Press 0 to get a menu for determination of the function of the two switches SW1 and SW2. In such a menu :

Press **UP** or **DOWN** to move the red field.
Press **TOGL** to modify data in the red field.
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

For "INPUT SWITCHING ONLY", you get e.g. next menu (setting most compatible with all other BARCO monitors) :

```
 INPUT SWITCHING MODE

SW 1       SW2          SELECTED INPUT

open       closed         INP 1
open       open           INP 2
closed     open           INP 3
closed     closed         INP 4

To return without saving :  CLEAR
To return with saving        ENTER
```

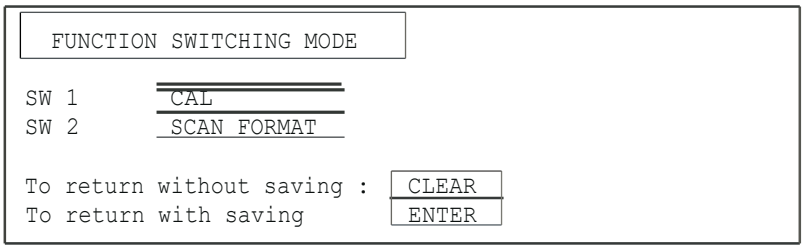
In case of an analog Component Module, 4 inputs can be set. If a Digital Module, 4 out of 6 inputs can be defined.

The front panel and the remote control are active at the same time. A remote input selection is carried out from the instant the status of one of the two switches SW1 and SW2 is modified.

continued on next page

MONITOR CONFIGURATION (continued)

For "FUNCTION SWITCHING", you get e.g. next menu :

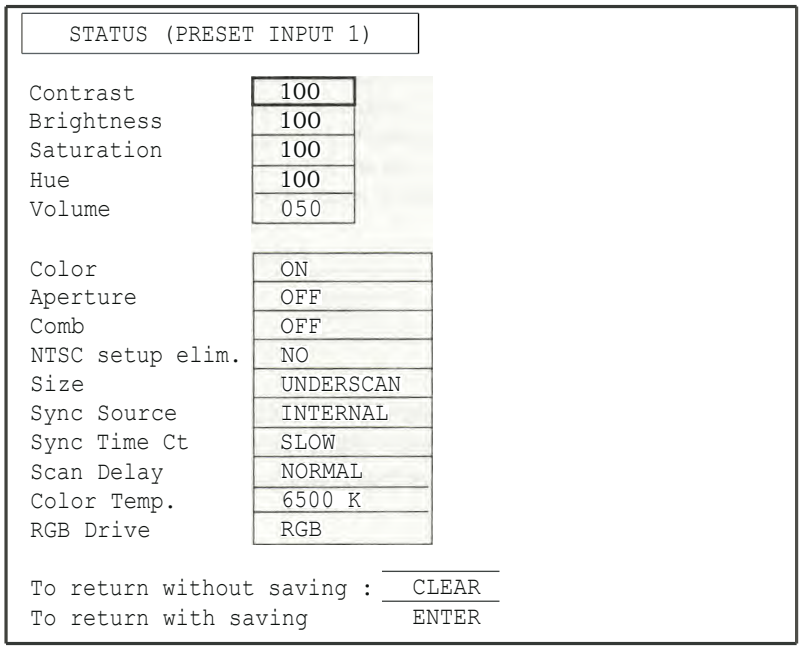


For each of the two switches SW1 and SW2, you can select using the TOGL key between :

INP1-INP2
INP1-INP3
INP1-INP4
INP2-INP3
INP2-INP4
INP3-INP4
CAL
PRESET
COLOR
APERTURE
COMB
SIZE
SCAN FORMAT
SYNC SOURCE
SYNC TIME CT
SCAN DELAY

Note that for SW1 and SW2 you have to make a different selection, otherwise you get the message when entering : "SELECT DIFFERENT ITEMS FOR THE TWO SWITCHES".
The front panel and the remote control are active at the same time. A remote function selection is carried out from the instant the status of one of the two switches SW1 and SW2 is modified.
For input selection, the left input marked in the red field corresponds to the open state of the switch, the right input to the closed state. Toggle functions as "COLOR" and "SCAN DELAY ONLY" look to a change of the status of the corresponding switch.

STATUS (PRESET INPUT X)



Via this menu, you can program the Preset of an input.
When this menu comes up, it shows the actual status of the monitor, not the preset values. This status can be stored as preset for the selected input, or you can first modify it and then store.
Press **UP** or **DOWN** to move the red field.
Press **TOGL** to modify data in the red field.
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

```
Contrast Brightness Saturation Hue : 050 to 200
Volume :          000  and  050 to 200
Color :           ON, OFF/FILTER, OFF/FULLBW
Aperture :        OFF / ON
NTSC setup elim.:NO / YES
Size :            UNDERSCAN / OVERSCAN
Sync Source :     INTERNAL / EXTERNAL
Sync Time Ct : SLOW / FAST
Scan Delay    : NORMAL / H-DELAY / V-DELAY / HIV DELAY
Color Temp. :     6500 K / 3200 K / 9300 K / A / B
RGB Drive :       RGB / RED only / GREEN only / BLUE only /
                  RED off / GREEN off / BLUE off
```

The monitor holds the parameters set for preset till they are modified again.
Note also that when you leave this menu and return to normal picture, when you want to see the monitor in its preset state, you have to press **PRE** first.

CVM 2037
CVM 2051

ALIGNMENT

```
        ALIGNMENT

    Manual with internal signal      1
    Automatic with Thoma             3
    Automatic with Barco probe       4
    Manual with live picture         5
    Automenu                         7
    Service page                     9

   To return :   CLEAR
```

Press **1** for manual colour temperature alignment (6500 K, 3200 K, 9300 K, A, B) with an internally generated White Field on the screen and a redefined keyboard for control (Color Temperature Overlay).

Press **3** for automatic colour temperature alignment (6500 K, 3200 K, 9300 K) with an internal or external test pattern, using a colour analyzer from TM THOMA (TMF2, TMF3 or TMF6 with RS-232 connection).

Press **4** for automatic colour temperature alignment (6500 K, 3200 K, 9300 K, A, B) with an internal or external test pattern, using a Barco Light Probe.

Press **5** for manual colour temperature alignment (6500 K, 3200 K, 9300 K, A, B) with a full screen displayed external video signal and a redefined keyboard for control (color temperature overlay).

Press **7** to set the AUTOMENU parameters. Automenu is a feature which facilates colour temperature alignment of a larger series of equivalent CVM monitors.

Press **9** to display the adjustment values for each of the different colour temperatures. Also the menu for White Uniformity and Setup Elimination adjustment.

The different items are described in full details on the next pages.

ALIGNMENT (continued)
Manual with internal signal

```
MANUAL ALIGNMENT MENU

6500 K    1      COL TEMP A   4
3200 K    2      COL TEMP B   5
9300 K    3

To return :   CLEAR
```

Start with 6500 K, so press 1

Lowlight setting for the three colour temperatures 6500 K, 3200 K and 9300 K is common and is only adjustable in 6500 K. For the colour temperatures A and B, lowlights are set separately.

When a colour temperature has been selected, you see the internal White Field and a Help Text. The selected colour temperature is mentioned a few seconds at the bottom of the screen.

```
MANUAL ALIGNMENT WITH INTERNAL SIGNAL

1.  HIGHLIGHTS :     Red   = contrast   up-down
                     Green = brightness up-down
                     Blue  = saturation up-down

2.  LOWLIGHTS        Red   = CAL  - R
                     Green = PRE  - G
                     Blue  = SAVE - B

3.  MISCELLANEOUS:   100% - 10%      = hue up-down
                     Color - mono    = volume up-down
                     R - G - B       =MONO - COMB - APT
                     Service CAL     = SIZE
                     Print           = SL/F
                     Exit alignment = CLEAR
                     Save settings = ENTER

TO CLEAR OR DISPLAY HELP TEXT : PRESS TOGL
```

The keyboard is modified to "Colour Overlay". Refer to page 28 for a more detailed description of the different keyboard functions.

ALIGNMENT (continued)
Automatic with Thoma

The monitor can be aligned automatically using a ™ Thoma TMF-2, TMF-3 or TMF-6 colour analyzer. As reference can be used the monitor's internal White Field or your external White Field.
For alignment with an external signal, first apply a 100% White Field to a composite input and select that input.
When via the menu's has been choosen for automatic alignment with Thoma, you have next menu on the screen :

```
        AUTOMATIC WITH THOMA

        With internal signals     1
        With external signals     2
```

Select 1 or 2.

```
    AUTOMATIC ALIGNMENT MENU

ITEM          SELECTION     STATUS
6500 K          NO
3200 K          NO
9300 K          NO

To exit :  CLEAR
To continue    ENTER
```

Use **UP** or **DOWN** to move the red field.
Press TGL to modify data in the red field : NO / YES .
You can only change peak white level when you select YES for 6500 K.
After selection of 6500 K and pressing ENTER, the following menu will appear :

```
    AUTOMATIC ALIGNMENT

    Peak white level selection
    Range : from 60 to 151 nit
    Peak white level = 090  nit

    Note : 1 nit 0.292 fL
    1 fL   = 3.43 nit

    To change between fL and nit :   TOGGLE
    To change value :  0-9
    To exit :   CLEAR
    To proceed :   ENTER
```

Enter peak white level (060 nit to 151 nit or 018 to 044 fL).
Proceed by pressing **ENTER .**

ALIGNMENT (continued)
Automatic with Thoma

```
Connect color analyzer to the monitor.
Calibrate color analyzer for offset.
Position color analyzer in center of screen.
Select continuous XYZ mode. Avoid incident light.

To return :  CLEAR
To start  :  ENTER
```

(white mark in / center of screen)

CAUTION

MOUNT THE COLORHEAD AFTER THE MONITOR HAS BEEN TURNED ON AND ONLY IF THE COLOR ANALYZER HAS BEEN CONNECTED TO THE CVS. PICTURE TUBE FLASHES OR SWITCHING THE MONITOR CAN DAMAGE THE CIRCUITRY OF THE COLOR ANALYZER

Connect the colorhead to the color analyzer. Connect the color analyzer to the monitor.
Turn on the analyzer : press ON.
For precise measurements, offset calibration is required : cover the colorhead to block incident light and press Abj.
If a Thoma TMF-2, press CON (for continuous measurement).
Press XYZ (standard color values for red-green-blue).

The automatic alignment starts now. When finished, the monitor will return tot the previous menu. Now you can select other colour temperatures or return to other menu's. If the alignment was successful, it will be indicated in the STATUS column as `passed`.

ALIGNMENT (continued)
Automatic with probe

The "Automatic with probe" alignment option is only useful for owners of a Barco Light probe, a probe designed for CVS, AVM, CVM-A and CVM20XX monitors.

Refer to the Barco Light Probe manual for more information.

ALIGNMENT (continued)
Manual with live picture

```
MANUAL ALIGNMENT MENU

6500 K              COL TEMP A   4
3200 K    2         COL TEMP B   5
9300 K    3
```

internal white field
only for character colour temperature alignment
with internal potentiometers

To return : CLEAR

This alignment mode permits manual colour temperature alignment with a full screen displayed external video signal and a redefined keyboard for control (colour temperature overlay).
After selection of the colour temperature, you get a full screen picture which can be controlled in colour temperature via the keyboard which works in "Colour Overlay mode". A help text is available and can be switched on and off by pressing **TOGL .**

```
MANUAL ALIGNMENT WITH INTERNAL SIGNAL

1.  HIGHLIGHTS :     Red   = contrast   up-down
                     Green = brightness up-down
                     Blue  = saturation up-down

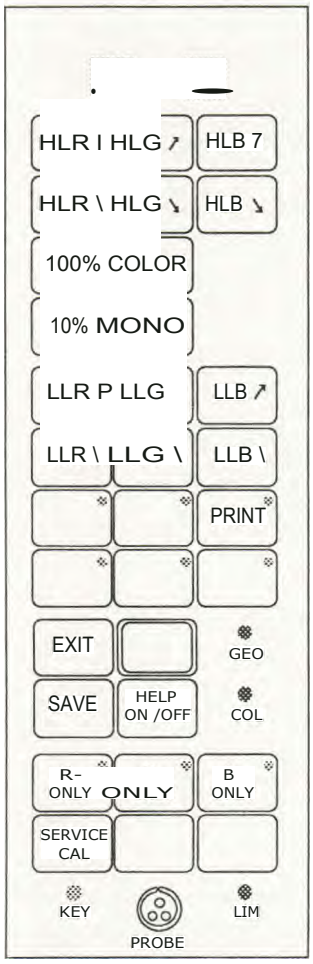
2.  LOWLIGHTS        Red   = CAL  - R
                     Green = PRE  - G
                     Blue  = SAVE - B

3.  MISCELLANEOUS:   100% - 10%      = hue up-down
                     Color - mono    = volume up-down
                     R - G - B       = MONO - COMB - APT
                     Service CAL     = SIZE
                     Print           = SL/F
                     Exit alignment = CLEAR
                     Save settings = ENTER

TO CLEAR OR DISPLAY HELP TEXT : PRESS TOGL
```

continued on next pages

ALIGNMENT (continued)
Manual with live picture



HLR HIGH LIGHTS RED UP & DOWN
Highlight adjustment for red.

HLG HIGH LIGHTS GREEN UP & DOWN
Highlight adjustment for green.

HLB HIGH LIGHTS BLUE UP & DOWN
Highlight adjustment for blue.

100 100% / 10 %

10 Two keys to drive the internal attenuator which decreases the input signal to 10%. This is a big help for lowlight adjustment as only one 100% white field signal is necessary.

COLOR Key to set monitor in colour during alignment.

MONO Key to set monitor in monochrome during alignment.

LLR LOW LIGHTS RED UP & DOWN
Lowlight adjustment for red.

LLG LOW LIGHTS GREEN UP & DOWN
Lowlight adjustment for green.

LLB LOW LIGHTS BLUE UP & DOWN
Lowlight adjustment for blue.

PRINT A single key-press starts the transmission via the REMOTE 1 connector to a printer (if connected) of a report of colour temperature control values for the selected colour temperature.

EXIT Key to leave the colour temperature adjustment mode (or Colour Overlay) without saving. The monitor has the colour temperature selection as before entering into Colour Overlay.

SAVE Key to save the actual status of the actually selected colour temperature.

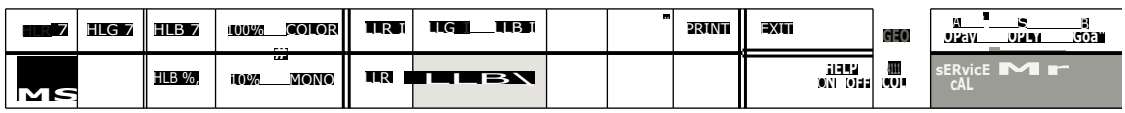
R-ONLY When this key is pressed, the monitor displays only red during colour temperature adjustment.

G-ONLY When this key is pressed, the monitor displays only green during colour temperature adjustment.

B-ONLY When this key is pressed, the monitor displays only blue during colour temperature adjustment.

SERVICE CAL When this key is pressed, all colour temperature adjustments for the selected colour temperature are set to calibrated position as a starting point.
If pressed by accident, leave the Colour Overlay mode by means of the EXIT key; however previously carried out adjustments since the last time the SAVE key was pressed will be lost.

continued on next page



How to align the different colourtemperatures of the monitor?

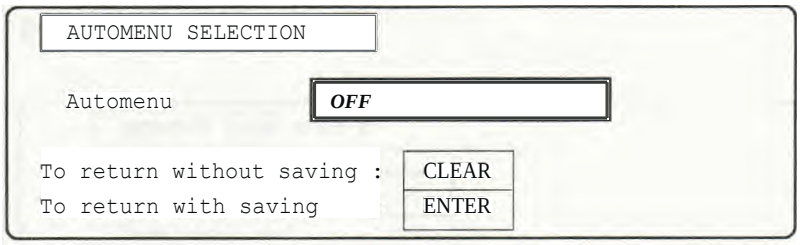
First adjust the colour temperature 6500 K.

Before starting the alignment of another colour temperature, always save the previously aligned one. To do so, press **SAVE** (key marked **ENTER)** and **EXIT** (key marked **CLEAR)** to get again into the MANUAL ALIGNMENT MENU for selection of the next colour temperature.

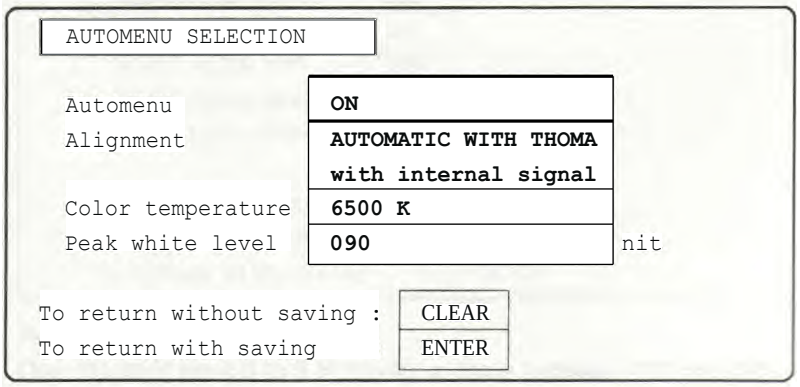
ALIGNMENT (continued)
Auto menu

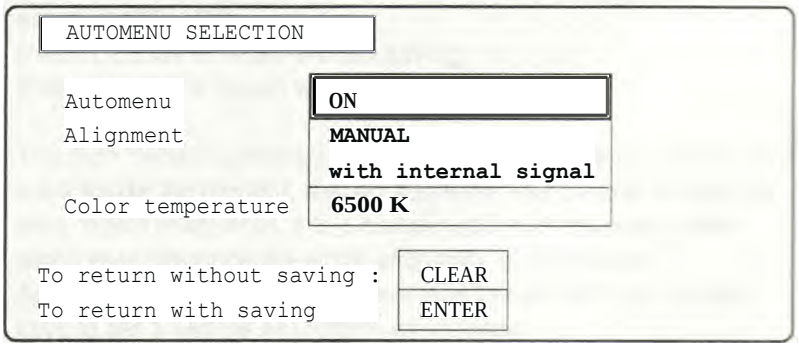
AUTOMENU is a feature which facilates the colour temperature alignment of the monitor by decreasing the quantity of menus you have to go through.
Via the AUTO MENU SELECTION menu — when in its field for Automenu is entered ON– you can determine how the monitor will set itself ready for alignment. When you do afterwards an alignment going via the main menu item 1 AUTO MENU ALIGNMENT, the monitor is set ready accordingly to start alignment without asking you to go through all the menus as you normally have to do. In case of automatic alignment you may connect and mount your probe immediately. In case of "Manual with live picture" you may start alignment via the keyboard.

Some examples of AUTOMENU SELECTION screens :



Peak white level selection is only available if 6500 K has been selected.
Press **TOGL** to switch between nit and fL.





ALIGNMENT (continued)
Service page

```
SERVICE PAGE

6500 K              1
3200 K              2
9300 K              3
COL TEMP A          4
COL TEMP B          5
White uniformity   (6)
Setup elimination   7
```

Five Service Pages are available, one for each colour temperature. They give an overview of the inside control codes for Contrast, Lowlights and Highlights. Values go between 000 and 255.
The Service Page also permits the manual modification of each of the displayed values.

```
SERVICE PAGE 6500 K

Contrast  100     101
Lowlights red     204
Lowlights green   202
Lowlights blue    204
Highlights red    106
Highlights green  108
Highlights blue   120

To select factory value :  CAL
To return without saving :  CLEAR
To return with saving       ENTER
```

Press **UP** to move the red field.
Use numeric keys **0** to **9** to modify a value between 000 and 255.
Press **CAL** to set a selected value to the factory choosen center value (mainly 127).
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

```
White uniformity = 127
```

The item "White uniformity" is available in software but needs hardware inside the monitor, a.o. an additional coil around the picture tube, which is optional. It is a compensation of magnetic fields which may influence the white uniformity of the picture.
Apply a full white field video signal and use the **UP** and **DOWN** keys to get a picture as uniform as possible.
Press **CLEAR** to return without saving. To return with saving, press **ENTER** and you get a warning screen :

ALIGNMENT (continued)
Service page (continued)

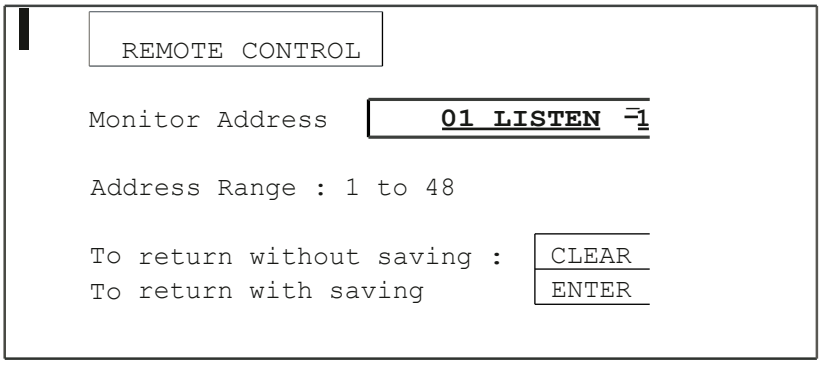
```
WARNING !
Do you want to save the new values ?
NO : Press CLEAR
YES : Press 0 followed by ENTER
```

Press **0** if you want to save.

```
Setup elimination = 00
```

In case of a NTSC input signal, it is possible to eliminate and so compensate the setup of 7.5%.
Selecting " Setup elim. 7 " in the service page menu allows you to calibrate this compensation value; use **UP** or **DOWN** to align.
The value between 000 and 020 is visible on the screen
Use **0** followed by **ENTER** to store the value. You get also a warning message as shown above.

REMOTE CONTROL



The Remote Control menu permits you to determine how the monitor will respond when connected via its REMOTE1 and REMOTE2 connectors to a remote control system. Such a remote control can be a SRC(I) or a MMRC(2).

Use the numeric keys **0** to **9** to set the individual monitor address between 01 and 48. When set for LISTEN (see below), the monitor will only listen to these instructions addressed to monitors with this address.

Use the **TOGL** key to select between :

LISTEN : the monitor listens to remote control.

NOLISTEN : the monitor does not listen to remote control (also not to the SRC).

BVRS : combined with 48 address setting to connect the monitor to a BVRS (3) router network. Refer to the BVRS User Instructions.

Press **CLEAR** to return without saving.

Press **ENTER** to return with saving.

(I) SRC Single Remote Control, a BARCO remote controller for one CVM2000, CVS, CVM(A) or AVM. More monitors can be controlled if they are connected in series, but not individually.

(2) MMRC Multi Monitor Remote Controller, a BARCO full **remote** controller for up to 48 BARCO monitors as CVM2000, CVS, CVM(A) or AVM, all individually or at the same time

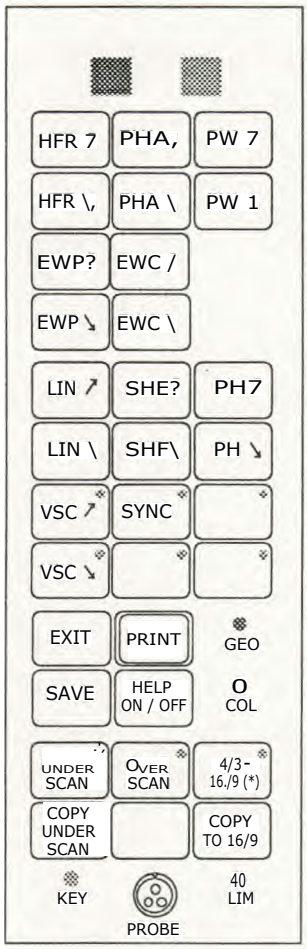
(3) BVRS Barco Video Routing Switcher.

CVM 2037
CVM 2051

GEOMETRY

(For authorized personnel only

When the monitor is set to geometry alignment mode, the keyboard is modified to a "geometry overlay mode" and brightness is increased to make Horizontal Phase easier.
A help text is available and can be switched on and off by pressing **TOGL.**

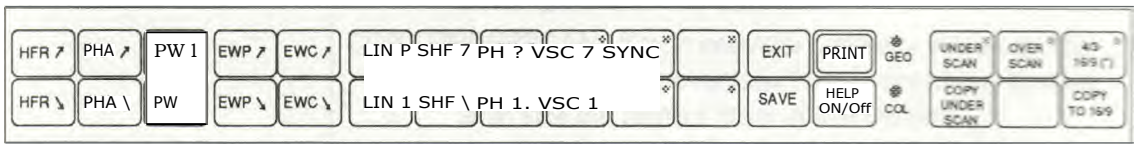



```
GEOMETRY ALIGNMENT

1. HORIZONTAL :     Frequency = contrast up-down
                    Phase      = brightness up-down
                    Width      = saturation up-down
                    EW Parabola = hue        up-down
                    EW Corner = volume     up-down
2. VERTICAL :       Linearity    = CAL - R
                    Shift        = PRE - G
                    Height       = SAVE - B
                    S correction = COMP INP - INP1
3. MISCELLANEOUS : Sync switch       = SYNC
                    Underscan         = MONO
                    Overscan          = COMB
                    Copy to overscan = SIZE
                    4/3 - 16/9 (*)    = APT
                    COPY 4/3 TO 16/9 = DEG
                    Print             - MENU
                    Exit geometry     = CLEAR
                    Save settings     = ENTER

TO CLEAR OR DISPLAY HELP TEXT : PRESS TOGL
```

Refer to next page for more information on the different alignment points for geometry



GEOMETRY (continued)

HFR HORIZONTAL FREQUENCY UP & DOWN
Horizontal frequency adjustment.

PHA HORIZONTAL PHASE UP & DOWN
Horizontal phase adjustment. UP means to the right.

PW PICTURE WIDTH UP & DOWN
Picture width or horizontal amplitude adjustment.

EWP EAST-WEST PARABOLA UP & DOWN
East-West correction setting.

EWC EAST-WEST CORNER UP & DOWN
East-West corner adjustment.

LIN VERTICAL LINEARITY UP & DOWN
Vertical linearity adjustment.

SHF VERTICAL SHIFT UP & DOWN
Vertical picture position setting.

PH PICTURE HEIGHT UP & DOWN
Picture height or vertical amplitude adjustment.

VSC VERTICAL S-CORRECTION UP & DOWN
Vertical S-correction setting.

SYNC Key to interrupt synchronization of the internal line oscillator during alignment of the horizontal free-running frequency using the **HFR** UP & DOWN keys. The SYNC LED is lit when synchronizaton is interrupted.

EXIT Key to leave the geometry adjustment mode without saving.

PRINT A single key press starts the transmission of a report of geometry control values to a printer (if connected) via the REMOTE 1 connector on the rear.

SAVE Key to leave the geometry adjustment mode with saving. To do so, press this key once so that the the green KEY LED lights up one time.

HELP ON/OFF Key to switch on/off the on-screen help text.

UNDERSCAN Key to select underscan size.
Underscan is identified by means of an enlighted green LED above this key.

OVERSCAN Key to select overscan size.
Overscan is identified by means of an enlighted green LEo above this key.

4/3-16/9 (*) Key to toggle between 4/3 and 16/9. The led in this key is lit when 16/9 is selected. The (*) marks the selected state when the LED is on.

COPY UNDERSCAN Key to copy the geometry values set for underscan size to overscan. It does not matter to what scan size the monitor is set at that moment.

COPY TO 16/9 Key to copy the geometry values of 413 to 16/9.

GEOMETRY (continued)

Howto adjust geometry?

Set the monitor ready for geometry alignment of 4/3 underscan.
Adjust the monitor for 4/3 underscan.
Copy the alignment to overscan (press **SIZE).**
Select 4/3 overscan (press **COMB).**
Align the monitor for 4/3 overscan.
Copy the alignment to 16/9 (press **DEG).**
Select 16/9 underscan (press **APT** and **MONO).**
Adjust the monitor for 16/9 underscan.
Copy the alignment to overscan (press **SIZE).**
Select 16/9 overscan (press **COMB).**
Finally adjust the monitor for 16/9 overscan.
Press **ENTER** to save if the alignment is satisfying.

The above mentioned adjustments are independent.

When geometry is correctly aligned completely or partly, it can be saved by pressing **ENTER.** Note that the previous alignment will be overwritten.
You can always exit the geometry alignment mode without saving, by pressing **CLEAR.**

PRIVILEGE SETTING

The Privilage Setting menu allows the control of passwords.
It makes them visible and permits modification.
On the menu below are shown the factory set passwords. They can have been modified to others in your monitor afterwards.

To get into this menu, the highest password (password 4) must be entered first.
To do so, press **ENTER 0 ,** then enter "password 4" and finally press **ENTER.**
Or, starting from normal picture :

ENTER ⌟ ⊂ **ie 0** ⓓ **ENTER**

Once a password is entered, it remains active within about 10 minutes after the last keypress in a menu status.
Passwords have to be re-entered after turn-on of the monitor.

PRIVILEGE SETTING

Password 1	**33211**	**DISABLED**
Password 2	**85842**	**DISABLED**
Password 3	**00418**	**ENABLED**
Password 4	**30106**	**ENABLED**

To return without saving : CLEAR
To return with saving ENTER

Once in the menu, press **UP** or **DOWN** to move the red field.
EnternewpasswotIsusingthenumerickeysOto9.
Press **TOGL** to switch between DISABLED and ENABLED .
Press **CLEAR** to return without saving.
Press **ENTER** to return with saving.

Available keys and functions if all passwords are enabled :

No password entered **VOL CAL PRE COMP INP INP1 INP2 INP3**
Password 1 entered : all keys and functions except **MENU**
Password 2 entered : all keys and functions except sub-menus
0 PRIVILEGE SETTING
6 ALIGNMENT
9 GEOMETRY
Password 3 entered : all keys and functions except sub-menu :
0 PRIVILEGE SETTING
Password 4 entered : all keys and functions

CVM 2037
CVM 2051

ADJUSTMENTS

For authorized personnel only

Test equipment required

Digital voltmeter.
Dual trace oscilloscope.
Video sweep generator (up to 10 MHz).
Video test generator.
EHT voltmeter.
Extension board (order number V5627200).

ADJUSTMENT PROCEDURE

Preliminary

WARNING

Read the Service Safety Precautions
at the front of this manual
before starting the adjustments.

Check for correct mains voltage.

Remove the rear and top covers from the monitor.

1 Switched Mode Power Supply

Insert the Switched Mode Power Supply into the extension board.
Connect a digital voltmeter to pin 2 of connector DIGITAL CON. and adjust **P2** for 120 Vdc.
Earth connection of the digital voltmeter is at pin 9,10,11 or 12 of connector ANALOG CON. or at TP3.

Connect a digital voltmeter to pin 1 of connector DIGITAL CON. and adjust **P1** for 5.2 Vdc.

2 Deflection and EHT board

2.1 High Voltage adjustment

Set all presets **P1 , P2 ,** and **P3** fully anticlockwise.
Connect an EHT meter to the anode of the CRT.
Adjust **P2** (EHT adjust) for 27.5 kV.
Adjust **P3** (EHT limit) so that the EHT Hold Down activates.
Adjust again **P2** (EHT adjust) for 24.5 kV (nominal EHT).
Seal P3.

X RADIATION WARNING

AFTER ANY SERVICE INTERVENTION. THE CORRECT OPERATION OF THE HOLD DOWN CIRCUIT MUST BE CHECKED.
SEE ADJUSTMENT PROCEDURE ITEM 2.1

2.2 Beam Current Limit adjustment

Set the contrast level to maximum.
For CVM2037/51 PIL & CVM37 IH : adjust **P1** (Beam Current Limit) for a light output of 200 nit.
For the other versions : adjust **P1** for a light output of 170 nit.

2.3 Horizontal Frequency adjustment

Set monitor into Geometry Alignment mode via **MENU.**
Select external synchronization (**SYNC** key) and use **CON UP & DOWN** keys to adjust horizontal free-running frequency (see also page 34 to 35).

2.4 On-board adjustmentsforgeometry

Available on-board adjustments for geometry are :

P4 HORIZONTAL SHIFT
P5 HORIZONTAL AMPLITUDE CENTRE VALUE (factory adjusted)
P7 BOWING
P8 SKEWING
P9 TRAPEZIUM
P10 VERTICAL AMPLITUDE CENTRE VALUE (factory adjusted)
L5 HORIZONTAL LINEARITY

3 PAL Decoder / RGB board (Decoder section)

3.1 Synchronization

Apply a PAL colour bars signal to INPUT 1.
Set the monitor to calibrated position by pressing the key **CAL.**
Connect the Channel 1 of an oscilloscope to the colour bars signal (looped through with the INPUT 1 of the monitor) and trigger the scope with that signal. Take care of good 75 ohms termination.
Connect the probe of Channel 2 of the oscilloscope to TP5.
Make a short-circuit with **J4** and adjust **P1** for zero beat of the sandcastle pulse signal.

Connect the probe of Channel 2 of the oscilloscope to TP10 and check the horizontal sync pulses in the position 'Normal Picture , Horizontal Delay and Pulse Cross' by pressing **DEL** on the keyboard.
Select 'Normal Picture' again.

3.2 Decoderchromabandfifteradjustment

Apply a video sweep signal to INPUT 1.
Connect the probe of the oscilloscope to TP18.
Adjust **L4 , L5** and **L6** for a maximum at 3 MHz and 5 MHz.

3.3 Notchfilteradjustment

Apply a PAL colour bars signal to INPUT 1.
Connect the probe of the oscilloscope to TP11.
Adjust **L1** for minimum chroma on the luminance signal.

Apply a 2T-bar signal to INPUT 1.
Connect the probe of the oscilloscope to TP13.
Adjust **L2 , L3** and **C48** for symmetrical and equal bottom distortion and a 2T-amplitude **of** minimum 96% of the bar signal.

3.4 Aperture correction

Apply a video sweep signal to INPUT 1.
Connect the probe of the oscilloscope to TP20.
Enable the aperture correction by pressing **APT** on the keyboard (green LED lights up).
Adjust with **P12** the aperture correction signal for equal level at the bottom of the sync pulse.

3.5 TDA 4510 adjustments

Apply a PAL colour bars signal to INPUT 1.
Connect the probe of the oscilloscope to TP22 (R-Y signal).
Make a short-circuit with **J5**
Adjust **C62** for zero beat.

In case the decoder board has an ACC/ ON-OFF board, make sure that the switch SW1 is set in the MOD.OFF position.
Connect the probe of the oscilloscope to TP23 (B-Y signal).
Adjust **L7** for correlation of two successive B-Y lines.
Adjust **P2** for correct matching of the direct and delayed signal.

3.6 ACC ON/OFF Circuitry

3.6.1 ADJUSTMENT OF THE LOOP-AMPLIFIER
Set switch SW1 in the MOD.ON position. The ACC-unit is now active.
Apply a colour-bars signal at the input of the decoder.
Connect a dc-voltmeter to TP1 of the ACC-unit and adjust **P5** for 750 mV(+/- 20mVdc).

3.6.2 PAL BURST PHASE
Connect an oscilloscope to TP23 on the main decoder board (B-Y output).
Make a short-circuit of pin 3 and 4 of the delay line DL2.
Adjust **P3** on the ACC-unit for correlation of two successive B-Y lines on the scope.

3.6.3 PAL CONSTANT BURST AMPLITUDE
Set switch SW1 in the MOD.OFF position and measure on TP23 the B-Y amplitude.
Set switch SW1 in the MOD.ON position and adjust **P1** for the same B-Y amplitude.

3.6.4 COLOUR KILLER LEVEL SETTING
Attenuate the input signal to the level on which you want of have colour killing.
(e.g. -10dB). Set **P6** so that colour is just switched-off.

3.6.5 CONTROL OF THE NON-ACC OPERATION
Connect an oscilloscope to the green cathode of the CRT.
Attenuate the input signal with 10 dB or increase the input signal with 6dB (no 750hm termination) and check if the saturation remains the same.

4 Decoder/ RGB (RGB section)

4.1 Synchronization signals

Apply a colour bars signal to INPUT 1.
Connect the Channel 1 probe of the oscilloscope to TP34 (blue signal).
Trigger the scope on the vertical interval.
Adjust with **P10** so that the black level of the signal is on an equal level as the blue AKB pulse.

Connect the probe of Channel 2 of the oscilloscope to TP35 (vertical blanking pulse).
Adjust with **P27** for correct position of the AKB pulse (blue channel) were the falling edge is 2 lines after start of the blue AKB pulse (or 1 line after the end of the blue AKB pulse).

4.2 Frequency response

Apply a sweep signal to INPUT 1.
Connect a 2 pF probe of an oscilloscope to the red output of the CRT socket.
Adjust **C98** for a flat frequency response up to 5.5 MHz.

Connect the same probe to the green output of the crt socket .
Adjust **C106** for a flat frequency response up to 5.5 MHz.

Connect the same probe to the blue output of the CRT socket.
Adjust **C114** for a flat frequency response up to 5.5 MHz.

4.3 Saturation level

Apply a colour bars signal to INPUT 1.
Connect a probe to the blue cathode.
Adjust **P11** for 100% saturation (equal blue bars)
Adjust **P9** for 20 Vpp video content (between black and white)

5 CRT Socket

5.1 VG2 adjustment

Apply a colour bars signal to input 1
Connect an oscilloscope to the green cathode
Adjust **P1** on the CRT-socket for 100Vdc (for CVM 2051 IM) and 80Vdc (for CVM 2037 IH between the top of the AKB-pulse and ground.

5.2 Focusadjustment

Adjust **P2 (** Focus) for optimal focus of the CRT.

6. Control & Sync board

6.1 CRTC clock generator

Apply a frequency counter at TP 6
Set BR3 in Test positie (near by U47)
Adjust **L1** for 7.5 MHz

6.2 Character generator

The characters can be adjusted in highlight (colour temperature).
and for the lowlight (black level).

Select in " Colour Alignment " (MENU 6).
Press 1 for "Manual with internal signal".
A white window field appears on the tube which corresponds with the highlight value for the characters.

Adjust **P4** on the C&S board for correct black level of the characters.
Adjust **P1** on the C&S board for 90 nit Red.
Adjust **P2** on the C&S board for 90 nit Green.
Adjust **P3** on the C&S board for 90 nit Blue.

6.3 Keyboard led supply voltage

With **P6 ,** the supply voltage of the keyboard leds is adjusted for 3Vdc on the emitter Q29.

6.4 Write start pulse adjustment

Select " Menu " or one of the other functions.
Keep pressing this key and adjust **P5** for visual no white steps in the picture.

CVM 2037
CVM 2051

Component input and audio circuit alignment

(For authorized personnel only

This section contains a step by step alignment procedure for the Component Input module as mounted inside the monitor.
It is advisable to perform this procedure in the same order as proposed to get optimum results.
Only the alignment of the video Output Section is necessary in case of a board installation or replacement.

Test equipment required

White field generator (switchable 10%, 100%).
PAL S-VHS colour bar test signal.
NTSC S-VHS colour bar test signal.
Audio sinewave generator (1 kHz, 1.5 Vpp).
8 ohms (4W) load (resistor or loudspeaker).
Oscilloscope.
Colour Analyzer.
For complete check also an Y/R-Y/B-Y test signal.

ADJUSTMENT PROCEDURE

1 Output Section To be carried out when the module is installed or replaced !

Connect a 10% White Field video test signal looped-through to the three inputs CHANNEL A, CHANNEL a and CHANNEL C and terminate on the last one (75 ohms switch upwards).

With the monitor switched on, program the OPT input for RGB(S) format. Refer to the Command Keys section of this manual.
Set the synchronization mode correctly (INT/EXT) by means of the **SYNC** key.
Set the monitor to calibrated position by pressing **CAL .**

Install a colour analyser, probe attached to the screen.
Adjust to have 0.7 nit for each colour by means of :

P12 for red,
P13 for green,
P14 for blue.

Apply (or switch over to) a 100% White Field video test signal.
Adjust for 120 nit for each colour by means of :

P10 for red,
P11 for green,
P9 for blue.

2 Decoder Section and Lum & Sync Section

Factory adjusted, adjustments to be carried out only in case of replacement of compenents in the decoder section and/or Lum & Sync section.

2.1 Sandcastle pulse

Program the OPT input for S-VHS format.

Apply a PAL S-VHS colour bar test signal to the inputs : chrominance (C) to CHANNEL A, luminance (Y) to CHANNEL B.

Connect an oscilloscope to TP10 (sandcastle pulse).
Synchronize the oscilloscope to the video input signal.
Short circuit bridge BR5.
Adjust P3 for zero beat of the sandcastle pulse on TP10.
Open BR5.

2.2 PAL decoder section

Connect the oscilloscope to TP15 (U6 chrominance input).
Adjust P8 for 200 mVpp chrominance signal at TP15.

Connect the oscilloscope to TP14 (R-Y).
Short circuit bridge BR6.
Adjust C58 for zero beat of the R-Y signal at TP14.
Open BR6.

Connect the oscilloscope to TP13 (B-Y).
Adjust L2 for correct phase and P6 for correct group delay.

2.3 NTSC decoder section

Apply a NTSC S-VHS colour bar test signal to the inputs : chrominance (C) to CHANNEL A luminance (Y) to CHANNEL B.

Connect the oscilloscope to TP14 (R-Y).
Short circuit bridge BR6.
Adjust C59 for zero beat of the R-Y signal at TP14.
Open BR6.
Adjust P7 for correct phase (monitor still in calibrated position).

2.4 Luminance

Apply a 100% White Field video signal (CHANNEL B is sufficient).
Install the colour analyzer, probe attached to the screen.
Adjust P2 for 120 nit on the screen.

2.5 Saturation

Connect the oscilloscope to TP23 (red output).
Adjust P4 for 100% saturation.

Connect the oscilloscope to TP25 (blue output).
Adjust P5 for 100% saturation.

3 Sound section

Factory adjusted, adjustments to be carried out only in case of replacement of compenents in the sound section.

Apply a 1.55 Vpp 1 kHz sine wave signal to the AUDIO input of the monitor.
Connect an 8 ohms (4W) load (loudspeaker or resistor) to the LS output, internal loudspeaker switched out. If a loudspeaker is available inside the monitor, this one can be used as load.
Set volume to maximum by means of the VOL key.

Adjust P1 for 8 Vpp over the load (U2 pin 2).

Set volume to normal again.

4 Finally

Reinstall the monitor correctly and do not forget to set the OPT input format.

CVM 2037
CVM 2051

SPARE PARTS FOR CVM2037

Order number	Description		Remarks (QTY : quantity)
V131112 A\ *	PT M34 JDT 01X E10		Picture tube CVM2037 IH
C321036	LS ***2W*** 8E 81X 81		Optional loudspeaker
V5628306	SMPS CVM2037/51		Switched Mode Power Supply
V5628310	INPUT MAINS CVM37/51		Mains Input and Filter board
V5628324 or	DEC PAL/RGB CVM2037/51		PAL Decoder fi RGB Amplifier
V5628328 or	DEC NTSC/RGBCVM2037/51		NTSC Dec. & ROB Ampl.
V5628329	DEC P/SECAM CVM2037/51		PAL/SECAM Dec. & RGB Ampl.
V5628331	BACZBOARD CVM2037/51		Backboard
V5628347	CRT SOCKET CVM2037		CRT Socket board CVM 2037 III
V5628361	CONTROL CVM2037/51		Control Board
V5628391	OPTION MOD CVM2037/51		Analog Component Input Module
V5628397	EHT/DEFL IH CVM2037/51		EHT & DEFL CVM2000
V600276	TRANSISTOR DISK	01	QTY: 3
V600592	BACKSIDE PANEL CVS 14"	01	QTY: 2
V600596	SCREEN RGB CVS	05	QTY: 1 Inside shield plate
V6005971	SCREEN CVS	04	QTY: 2 Inside shield plate
V600598	BRACKET CRT CVS 1		QTY: 2 Left bracket
V600599	BRACKET CRT CVS 2		QTY: 2 Right bracket
V600610	SCREEN LATCH CVS14+20"	00	QTY: 2
V600611	BOTIsCHPLATE CVS 14"	04	QTY: 1
V6006123	COVER RAL9005 CVM2037	01	QTY: 1 Metal top cover
V600677	LUG FIXATION CVS 14"	02	QTY: 4
V600682	SCREEN SMPS CVS	02	QTY: 1 Inside shield plate
V600696	AQUADRA UN CVS 14"	00	QTY: 1
V601377	CONNECTOR RETAINER CVM	00	QTY: 1
V602414	REAR PANEL CVM37/5120	02	QTY: 1
V6024141	REAR PANEL ISOLATION	00	QTY: 1
V602415	MAINS FILTER SUPPORT		QTY: 1
V602455	LOGO CVM 2051-CVM 2037	00	QTY: 1
V602792	SIDE ASSEMBLY	02	QTY: 2
V620052	PCB-HOLDER CVS	02	QTY: 2
V620055	POWER KNOB CVS	01	QTY: 1
V6220691	FRONT 14" RAL9005	01	QTY: 1 Front bezel
V6221021	KEYBOARD BARCO CVM2037	01	QTY: 1
V670020	SPO DEGAUSS 14"	00	QTY: 1
V728041	G PCB L 50 WO CAM		QTY: 2
V7290410	FOOT 3/37	02	QTY: 2 Footh lath (one piece)
S24085	INSTR MAN CVM2037/2051		Instruction Manual (User & Technical)

NOT DELIVERED WITH MONITOR BUT AVAILABLE :

V349109	EXTENSION CABLE ROB	3 needed (for cathodes)
V349250	EXTENSION CABLE DEFLECTION	
V5627200	EXTENSION BOARD	
C9824680	SERVICE KIT	Kit for all CVS/AVM/CVM-A

CVM 2037
CVM 2051

SPARE PARTS FOR CVM2051

V131133	0 * PT M48 JBY 02X E27		Picture tube CVM2051 IM
C321036	LS 2W 8E 81X 81		Optional loudspeaker
V356107	HANDLE MONITOR 3/51		QTY: 2
V5628306	SMPS CVM2037/51		Switched Mode Power Supply
V5628310	INPUT MAINS CVM37/51		Mains Input and Filter board
V5628324 or	DEC PAL/RGB CVM2037/51		PAL Decoder & RGB Amplifier
V5628328 or	DEC NTSC/RGBCVM2037/51		NTSC Dec. & RGB Ampl.
V5628329	DEC P/SECAM CVM2037/51		PAL/SECAM Dec. & RGB Ampl.
V5628331	BAC:INBOARD CVM2037/51		Backboard
V5628348	CRT SOCKET CVM2051		CRT Socket board CVM 2051 IM
V5628361	CONTROL CVM2037/51		Control Board
V5628391	OPTION MOD CVM2037/51		Analog Component Input Module
V5628397	EHT/DEFL TB CVM2037/51		EHT & DEFL CVM2000
V600276	TRANSISTOR DISK	01	QTY: 1
V600596	SCREEN RGB CVS	05	QTY: 1
V6005971	SCREEN CVS	04	QTY: 2
V600610	SCREEN LATCH CVS14+20"	00	QTY: 2
V600615	BACK STIFFNER CVS 20"	02	QTY: 1
V600616	BACK STIFFNER CVS 20"	03	QTY: 1
V600617	MIDDLE STIFFNER CVS 20"	01	QTY: 1
V600618	MIDDLE STIFFNER CVS 20"	02	QTY: 1
V600619	CORNER STIFFNER CVS20"	01	QTY: 2
V600622	BACKSIDE PANEL CVS 20"	01	QTY: 2
V600625	BRACKET CRT CVS 20"	02	QTY: 4
V600627	BOTTOMPLATE CVS20"	02	QTY: 1
V6006283	COVER RAL9005 CVM2051	02	QTY: 1 Metal Top Cover
V600682	SCREEN SMPS CVS	02	QTY: 1
V601377	CONNECTOR RETAINER CVM	00	QTY: 1
V602414	REAR PANEL CVM37/5120	02	QTY: 1
V6024141	REAR PANEL ISOLATION	00	QTY: 1
V602415	MAINS FILTER SUPPORT	00	QTY: 1
V602455	LOGO CVM 2051-CVM 2037	00	QTY: 1
V602774	SIDE ASSBLY R CVM2051	01	QTY: 1
V602791	SIDE ASSBLY L CVM2051	02	QTY: 1
V620052	PCB-HOLDER CVS	02	QTY: 2
V620055	POWER KNOB CVS	01	QTY: 1
V6220701	FRONT 21"9005 2051 $$$	02	QTY: 1 Front bezel
V6221011	KEYBOARD BARCO CVM2051	01	QTY: 1
C660193	UN AKWADAG CD 351	01	QTY: 1
V670021	SPO DEGAUSS 21"	00	QTY: 1
V728041	G PCB L 50 WO CAM		QTY: 2
C7290411	FOOT LATH CD51/CM51	02	QTY: 2 Footh lath (one pe::,e
SM085	INSTR MAN CVM2037/2051		Instruction Manual (User & 749ᶜ ł.n:_oaL

NOT DELIVERED WITH MONITOR BUT AVAILABLE :

V349109	EXTENSION CABLE RGB	3 needed (for cathodes)
V349250	EXTENSION CABLE DEFLECTION	
V5627200	EXTENSION BOARD	
C9824680	SERVICE KIT	Kit for all CVS/AVMVCVM-A

CVM 2037
CVM 2051

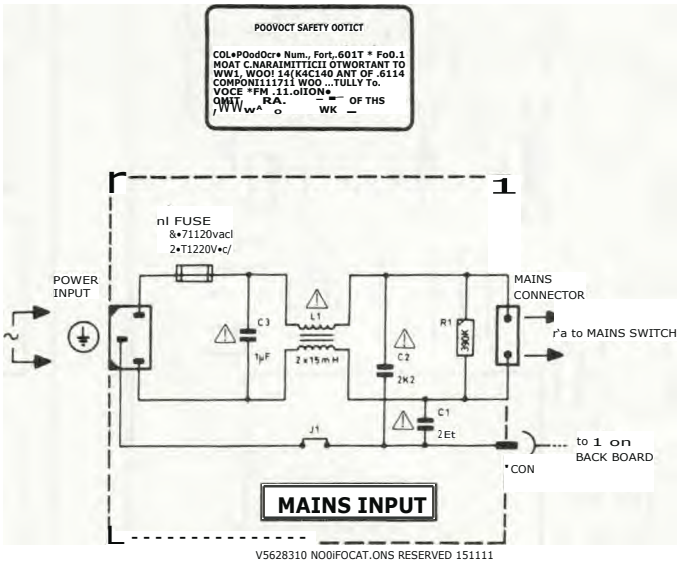
SCHEMATIC DIAGRAMS

List of schematic diagrams on next pages

Mains Input	V5628310
Switched Mode Power Supply	V5628306
EHT & Deflection	V5628397
Control	V5628361
Decoder & RGB modules :	
PAL Decoder & RGB amplifier	V5628324
NTSC Decoder & RGB amplifier	V5628328
PAL/SECAM Decoder & RGB amplifier	V5628329
Non-ACC Sub-module (on decoders)	V5627109 / V5627111
CRT Socket	V5628347 / V5628348
Backboard (pin configuration)	V5628331
Analog Component Input Module	V5628391

MAINS INPUT

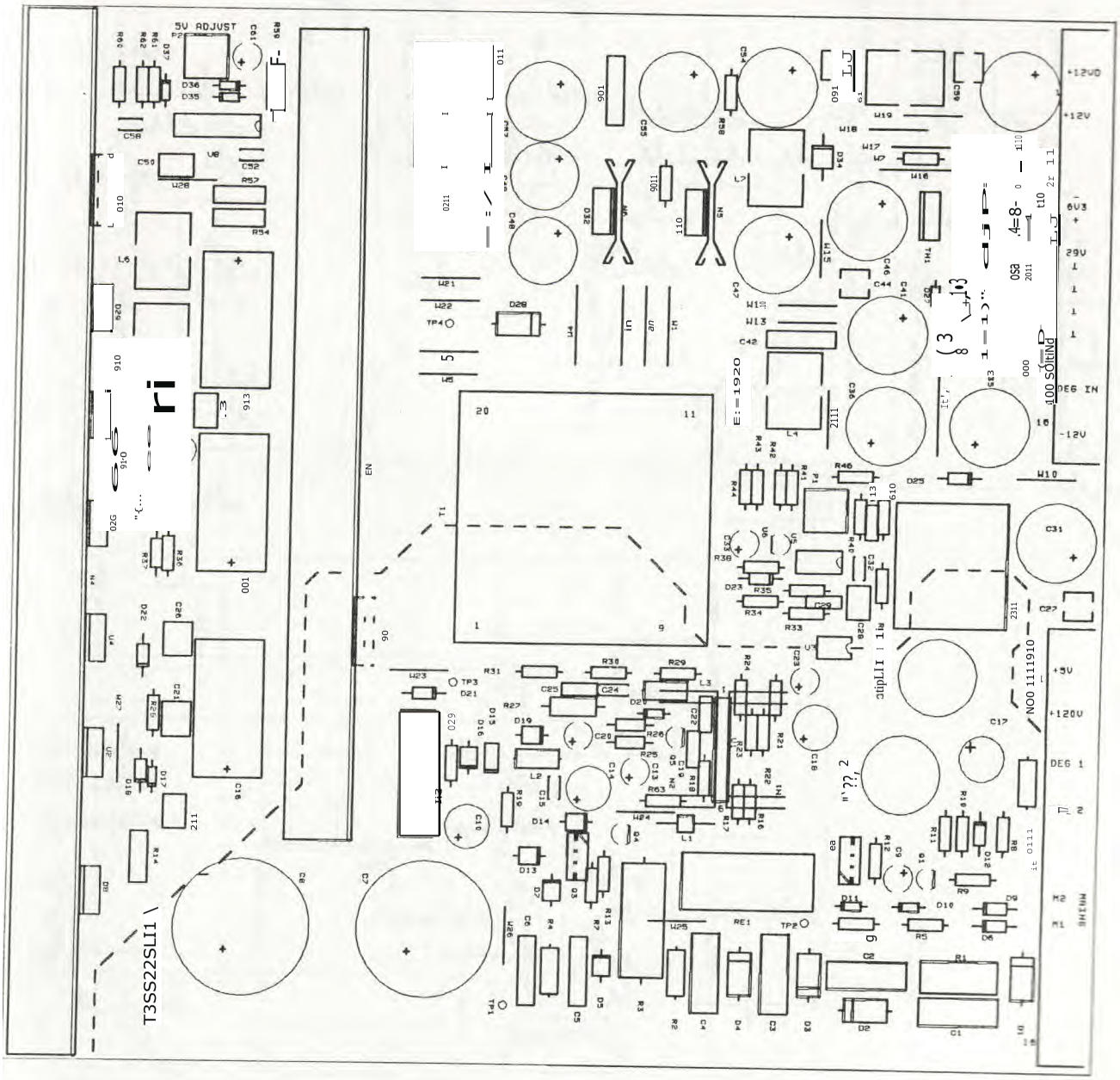
V5628310



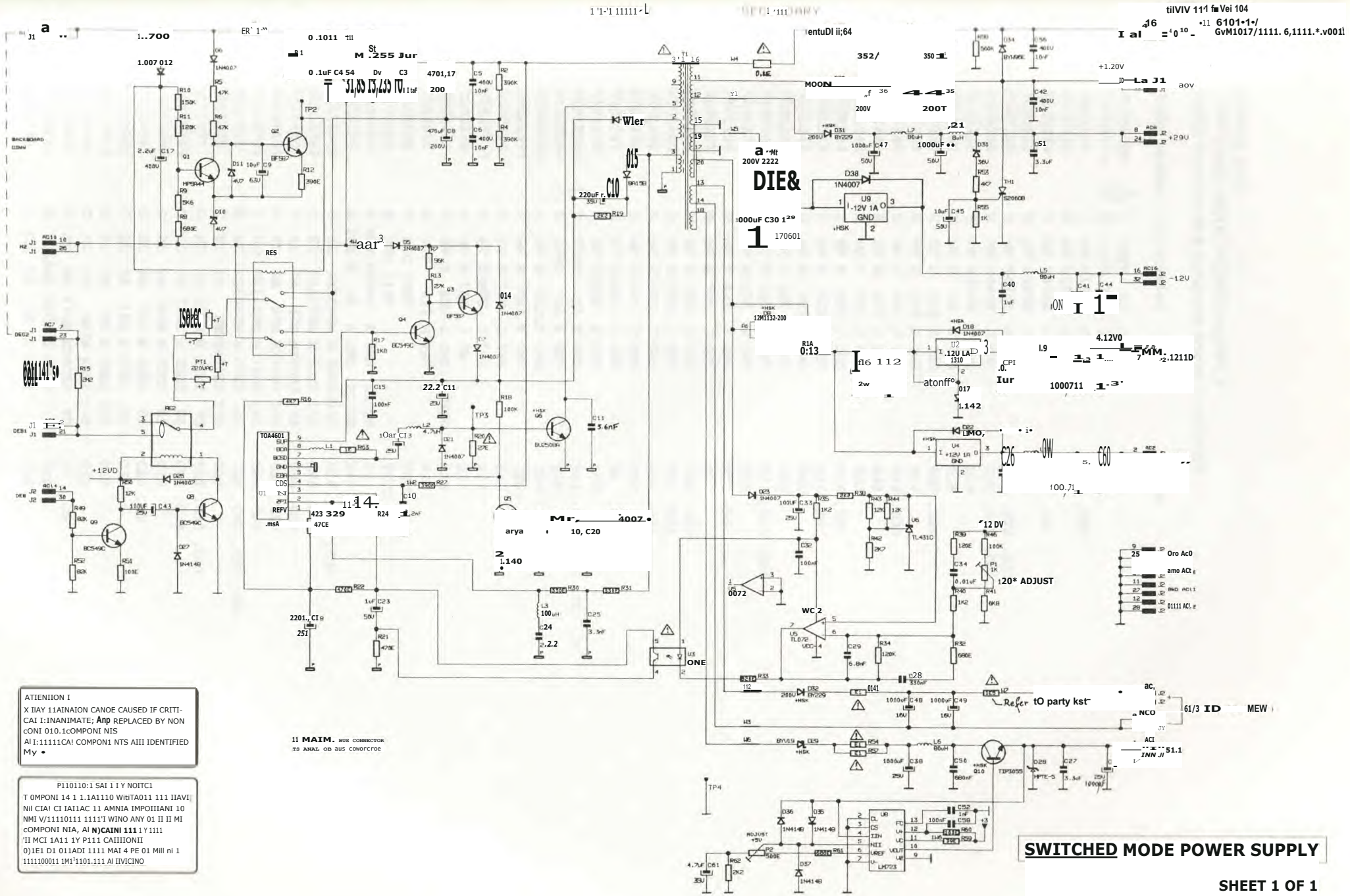
PARTS LIST
MAINS INPUT
Order number of a complete board : V5628310

Order number	Description	Item
V104648	R HV 390K J	R2
C1147169	CPOSAPO 1M MAC250	C3
C114722	CCESADI 2K2 MAC400	C1 ,C2
V313259	CON MOB SE MAINS	MAINS CONNECTOR
C313454	CON MOB .187 .5 P 1	J2
V3136132	CON MOB TE 2.36 P 2	J1
C314116	FUSE 5X20 2.000A T	IF 220 Vac
V314150	FUSE 6X32 4.000A SS	IF 120 Vac
V314508	FUSE CAP TE 6X32	IF 120 Vac
C314509	FUSE CAP TE 5X20	IF 220 Vac
V314513	FUSE HOLD 5X20+6X32	
V600218	SHIELD MAINS FILTER	
V/51450	PCB MAINS CVM	PRINTED CIRCUIT BOARD
C773309	COIL MAINS 23.00 NH	Li

SWITCHED MODE POWER SUPPLY



Switched Mode Power Supply

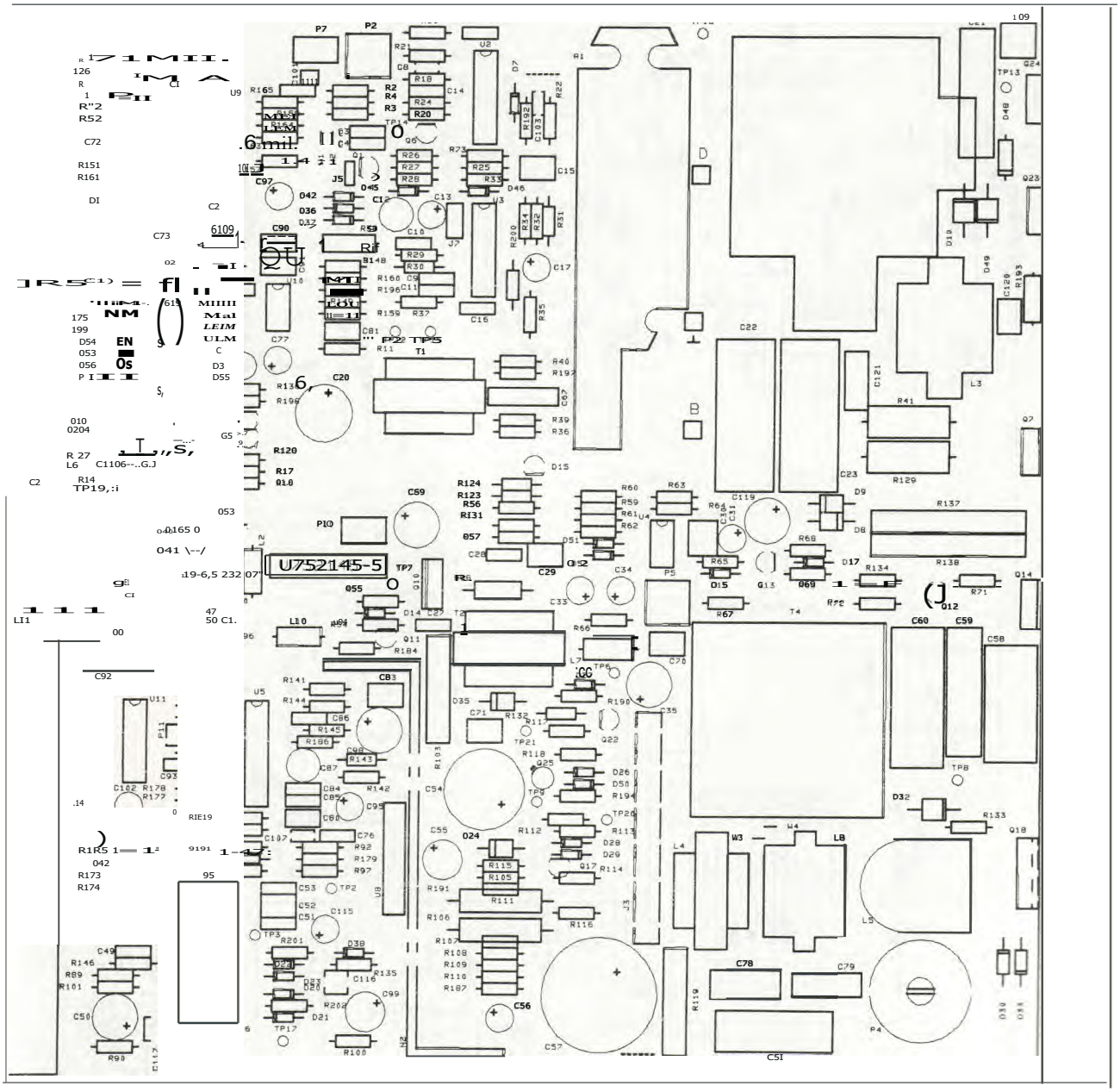

SWITCHED MODE POWER SUPPLY
SHEET 1 OF 1
MODIFICATIONS RESERVED 16SEP93
ATIENIION I
X IIAY 11AINAION CANOE CAUSED IF CRITI-CAI I:INANIMATE; Anp REPLACED BY NON cONI 010.1cOMPONI NIS
Al I:11111CA! COMPON1 NTS AIII IDENTIFIED
My •
P110110:1 SAI 1 I Y NOITC1
T OMPONI 14 1 1.1A1110 WitiTA011 111 IIAVI Nil CIA! CI IAI1AC 11 AMNIA IMPOIIIANI 10 NMI V/11110111 1111'I WINO ANY 01 II II MI cOMPONI NIA, Al N)CAINI 111 I Y 1111 'II MCI 1A11 1Y P111 CAIIIIONII 0)1E1 D1 011ADI 1111 MAI 4 PE 01 Mill ni 1 1111100011 1M1'1101.111 Al IIVICINO
11 MAIM. BUS CONNECTOR TS ANAL OB aus cowcrcoe
ONE
ADJUST
ADJUST
Refer tO party kst
MEW
DIE&
Oro Ac0
amo ACt
01111 ACI.
+1.20V
+29U
-12V
+12UD
+5V
+12 DV
+12V0
TOA4601
TL072
TL431C
LM723
TIP3055
BC549C
BC559C
BC548C
BF392
BA158
BY229
BY100
BYV19
1N4007
1N4148
MPSH44
RES
REFV
CDS
GND
VCC
VOUT
UCC-4
GND
+HSK
ac,
NCO
ACI
INN JI
51.1
61/3 ID

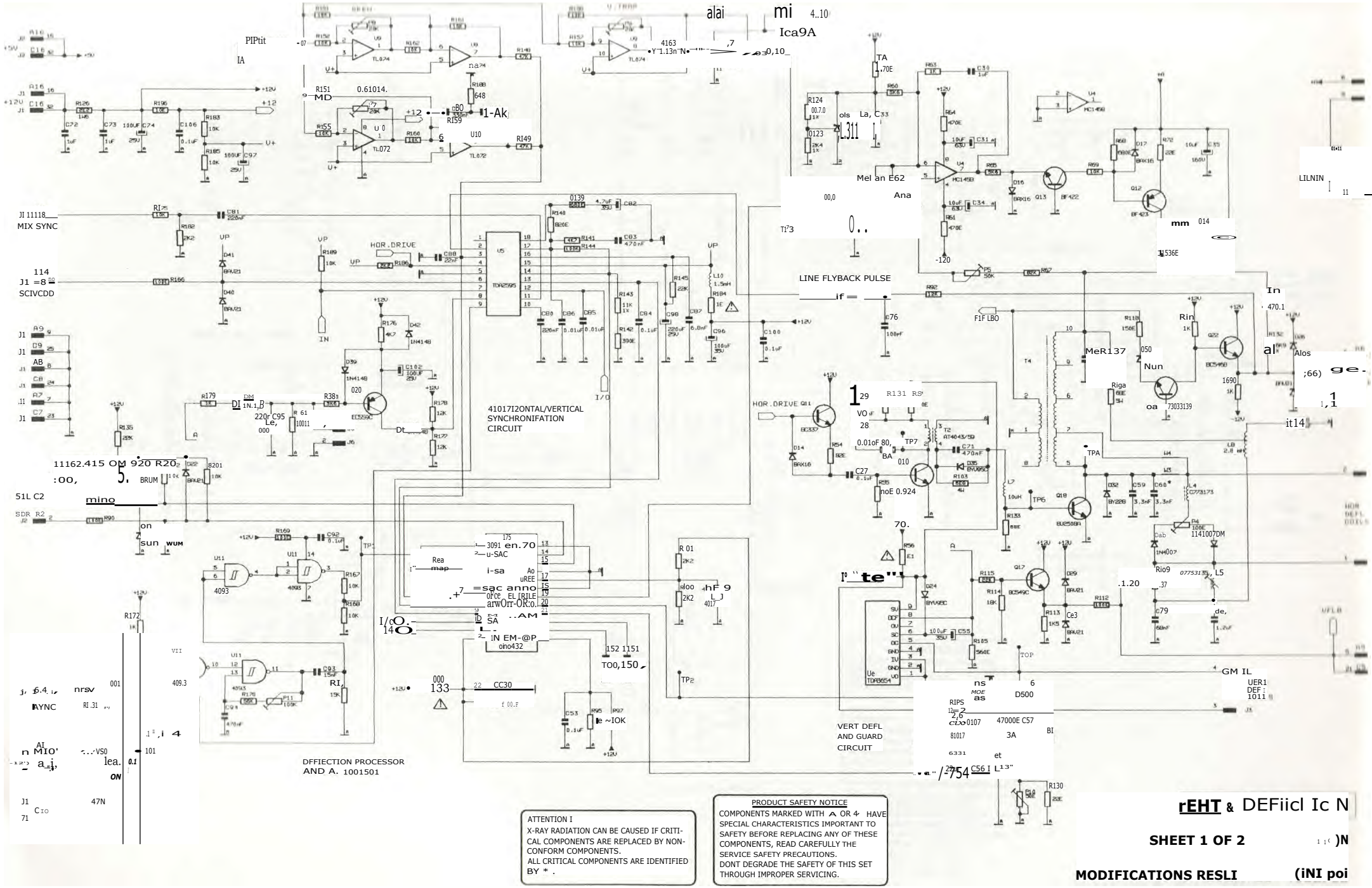
PARTS LIST
SWITCHED MODE POWER SUPPLY
Order number of a complete board : V5628306

Order number		Description	Item
V1011008		R CFFH lE J OW25	R63
V1011179	⚠	R CFFH 27E J OW25	R20
V101224		R ME' H100E J OWS	R51 ,R60
V101225		R ME' 11120E J OW5	R39
V101230		R ME' H330E J OWS	R30 ,R31
V101231		R MF H390E J OWS	R12
V101232		R MF H470E J OWS	R21 ,R22 ,R23
V101234		R MF H680E J 0W5	R32 ,R61 ,R8
V101235		R MF H820E J 0w5	R33
V101236		R MF H 1K J 0w5	R55
V101237		R MF H 1K2 J OWS	R35 ,R40
V101239		R MF H 1K8 J OWS	R17
V101240		R MF H 2K2 J OWS	R19 ,R38
V101241		R MF H 2K7 J OW5	R42
V101242		R MF H 3K3 J OWS	R62
V101244		R MF H 4K7 J OWS	R16 ,R53
V101245		R MF H 5K6 J OWS	R24 ,R9
V101246		R MF H 6K8 J OWS	R41
V101248		R MF H 10K J OW5	R29
V101249		R MF H 12K J 0w5	R43 ,R44 ,R50
V101253		R MF H 27K J OWS	R13
V101256		R ME' H 47K J OW5	R5 ,R6
V101257		R MF H 56K J OW5	R7
V101259		R MF H 82K J OWS	R49 ,R52
V101260		R MF H100K J OWS	R18 ,R46
V101261		R MF H120K J 0w5	R11 ,R34
V101262		R MF 11150K J OWS	R10
V101267		R MF H390K J OW5	R2 ,R4
V101269		R MF H560K J OWS	R58
V1012998	L	R CFFH El K OW5	R14 ,R54 ,R56 ,R57 ,W4
V1018998	A\	R CFFH El K OW7	R48
V1026086		R MF H 1K21F OW6	R26
V1026497		R MF H 32K4 F OW6	R25
V102919		R MF H 39E J 1W6	R59
V1029313		R MF H390K J 1W2	R27
C103349		R MO H 12K J 4W	R3
V104662		R HV H 2M2 J OWS 3500	R15
V105016		R NTC 4E7 M 1W5	R1
C105209		R PTC 220V	PTC1
C105210		R PTC 110V	PTC2
V106725		R TCE H500E K OW5 SlOTS	P2
V106726		R TCE H 1R K OWS SlOTS	P1
V1111829		C EL AX1000M M 35E14105	C16 ,C30 ,C38
C1113719		C EL RA1000M M 50E3 105	C46 ,C47
V111400		C EL RA 47M M200E3 85	C35 ,C36
C1114189		C EL RA 22M M350E3 105	C55 ,C57
V1114709		C EL RA1000M M 16E2 105	C48 ,C49
V111471		C EL RA1000M M 25E3 105	C31 ,C41 ,C53 ,C.54
V111475		C EL RA 2M2M400E2 105	C17
V111477		C EL RA 100M M 25E2 85	C13 ,C33 ,C43
V1114789		C EL RA 220M M 25E2 85	C14 ,C18
V1114809		C EL RA 220M M 35E2 85	C10
V111494		C EL RA 10M M 63E2 85	C20 ,C9
V1114942		C EL RA 10M M 50E1 105	C45
V1115469		C EL RA 1M M 50E2 105	C23
V1115509		C EL RA 4M7M 63E2 105	C61
V1116431		C EL RA 470M M200E4 85	C7 ,C8
V112366		C N7501 220P G 63E2	C22
V112739		C CE MI 1N K 63E2	C52

Order number	Description	Item
C112743	C CE MI 2N2K 63E2	C24
C112745	C CE MI 3N3K 63E2	C25
C112763	C CE MI 10N U 63E2	C34
V1127830	C X7R MU 100N K 50E2 125	C15 ,C32 ,C58
C112837	C CE DI 1ON S400E3	C42 ,C5 ,C56 ,C6
V1140296	C POMERA 8N2K250E2 85	C19
V114091	C POMERA 330N K 63E2 85	C28
V114094	C POMERA 680N M 50E2 85	C12 ,C39 ,C50
V114096	C POMERA 1M K 50E2 85	C21 ,C26 ,C40
V114099	C POMERA 3M3M 50E2 85	C27 ,C44 ,C51 ,C59 ,C60
C114162	C POMERA 100N K400E6 85	Cl ,C2 ,C3 ,C4
V114486	C PO RA 6N8M100E2 100	C29
V1150103	C PPMERA 3N3J162E9 HV	C11
V131411	Q BC549C N ***SS*** T092	Q4 ,Q5 ,Q8 ,Q9
V1316211	D 1N4148 ***SW*** D035	D20 ,D27 ,D35 ,D36 ,D37
V131637	D BA158 F R D041	D15
C131646	D 1N4007 R D041	D12 ,D14 ,D16 ,D18 ,D19 ,D21 , D22 ,D23 ,D25 ,D38 ,D5 ,D6 , D7 ,D9
V131692	U 82A CNX DIP6 P	03
V1317292	D ZEN 4V7 OW5 B D035	D10 ,D11
V131777	D ZEN 36V OW5 C D035	D30
C131902	D BY255 R D013	D1 ,D2 ,D3 ,D4
V131909	D PEYR1045 SCH T0220	D29
V131914	D BYW96E AFSR SOD64	D34
V131918	D BY329-1000 FSR T0220	D26 ,D33
V1319182	D BY229-200 FSR T0220	D24 ,D31 ,D32
V131952	D BYV32-200 UFSR T0220	D8
V132194	U 072 TL DIP8 P	05
V132211	Q S0402BH TH P T0220	TEl
V132500	Q MPSA44 N SS T092	Q1
V132512	Q BF587 N P T0202	Q2 ,Q3
V132572	Q B02508A N P SOT93	Q6
V132580	Q TIP3055 N P SOT93	Q10
V1327461	U 4601 TDA SIP9 P	01
C1330541	Q ***ACC*** CLIPS SOT93	0012
V1330542	Q ACC CLIPS T0220	0023,0024
C133055	Q ACC ISO MICA 25X 28	0005
V133056	Q ACC HTSNK SOT32	Ni ,N2
V133089	Q ACC HTSNK T0220	N5 ,N6
C134002	U 7812 T0220 P	02 ,04
V134015	U 723 DIP14 P	08
C134016	U 7912 T0220 P	09
V134018	U 431C TL T092 P	06
C302108	CORE TUBE 3.5/ 1.3 X 3	Ll
V302126	CORE TUBE 6 / 3 X18	W16
V3061282	CH AX NS 4.7 UH	L2
03061442	CH AX NS 100 OH	L3
V306222	CH TOR V 80 OH 2A	L10 ,L4 ,L5 ,L6 ,L7 ,L8 , L9
C313590	J EUR3C MBS P32 E1C2 S1.6	J1 ,J2
V3243452	RLY 90V 2C BV MNS M	REL1
V3243479	RLY 12V 1C BV BINS M UL	REI2
V6020880	HEATSINK SMPS L225MM 00	N4
V6020881	HEATSINK SMPS L180MM 00	N3
V602950	TESTPIN 00	TP1 ,TP2 ,TP3 ,TP4
C7123024	WHSR 7 X 3.25BAK1.00 02	0030
V752255	PCB SMPS CVM LA	0009
V7752620	SMPS TRF-1 CVM LA	T1 (transfomer)

EHT & DEFLECTION

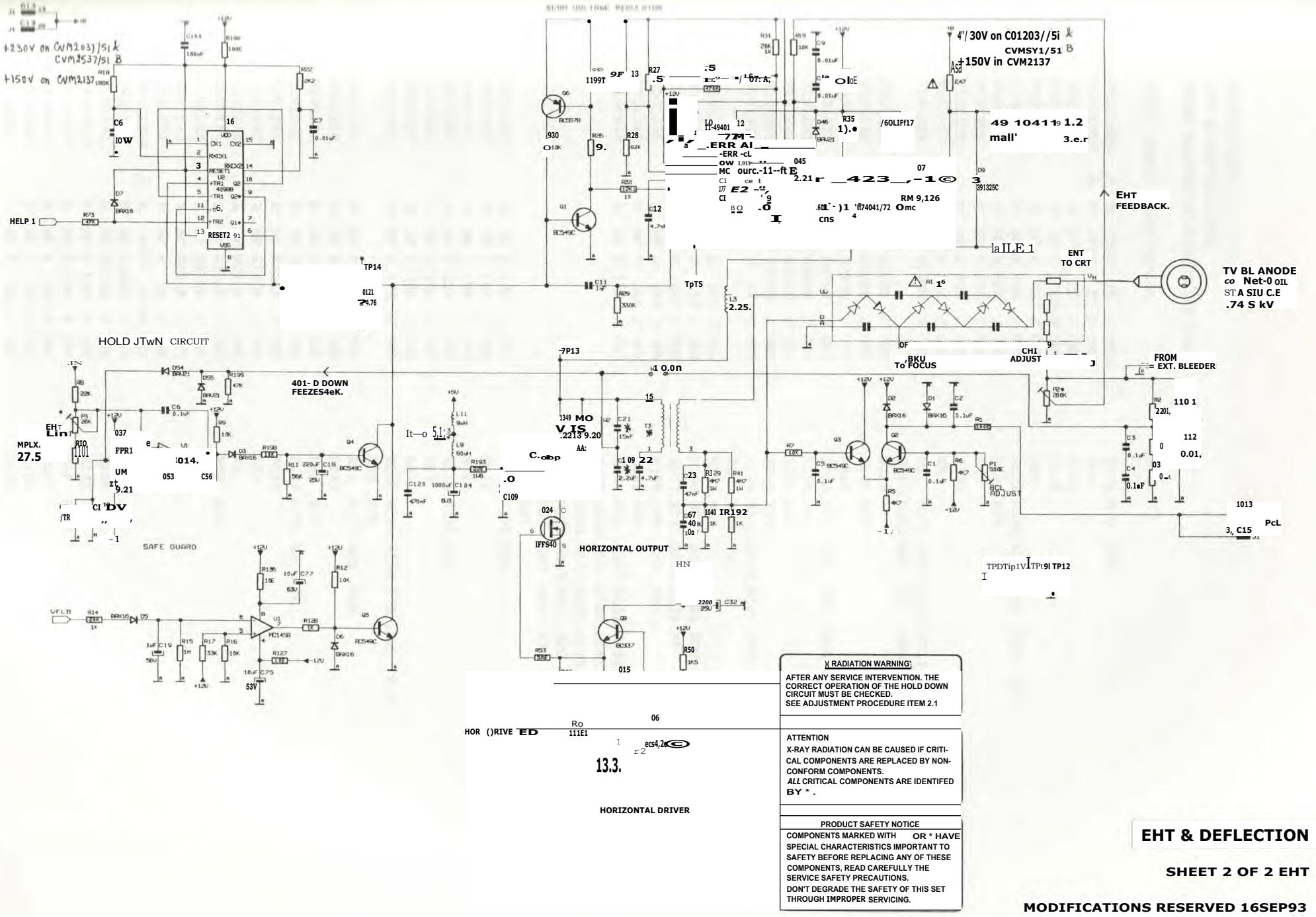




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SHEET 1 OF 2

MODIFICATIONS RESLI **(iNI poi**



EHT & DEFLECTION

SHEET 2 OF 2 EHT

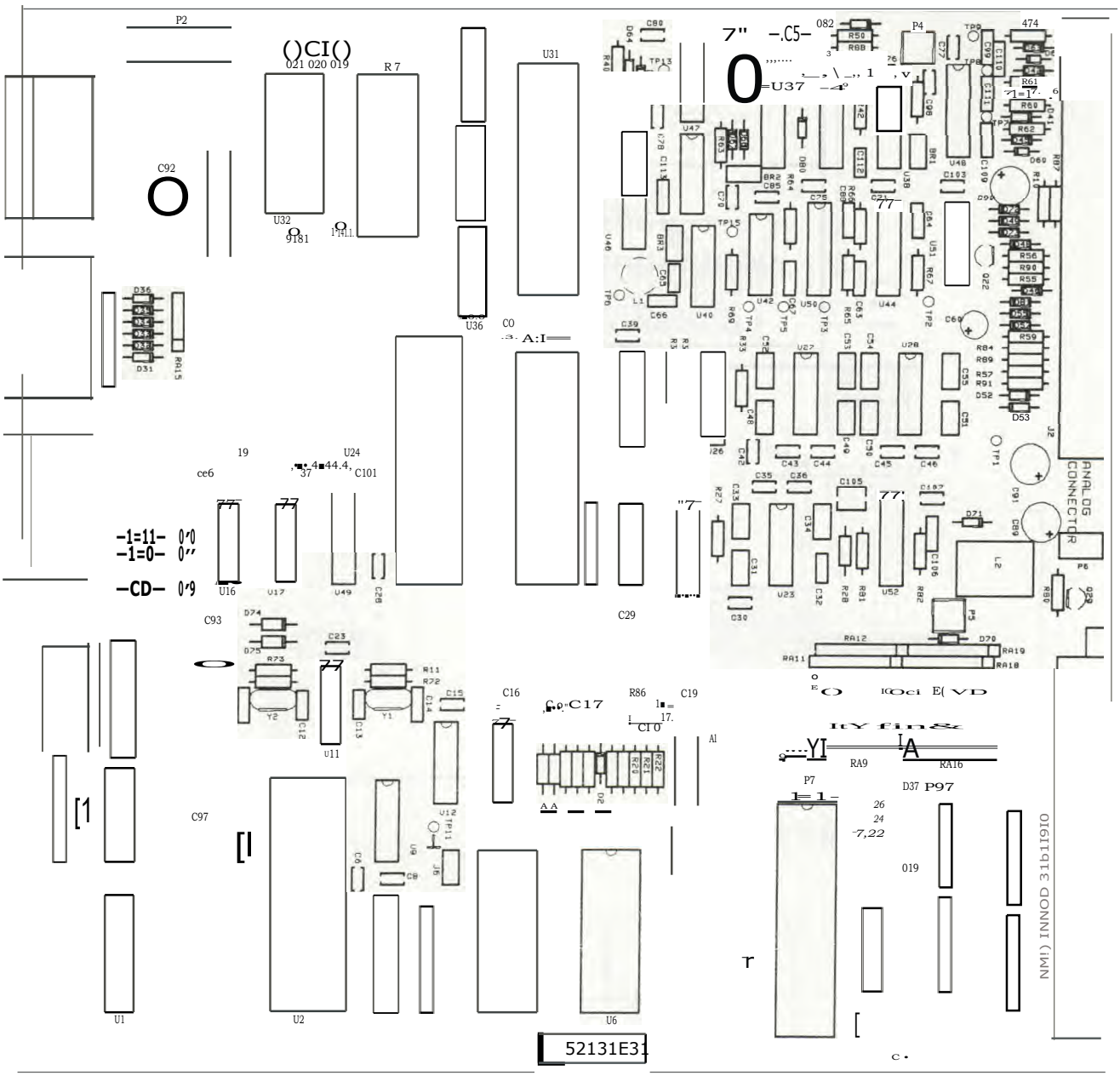
MODIFICATIONS RESERVED 16SEP93

PARTS LIST
EHT & DEFLECTION
Order number of a complete board : V5628397

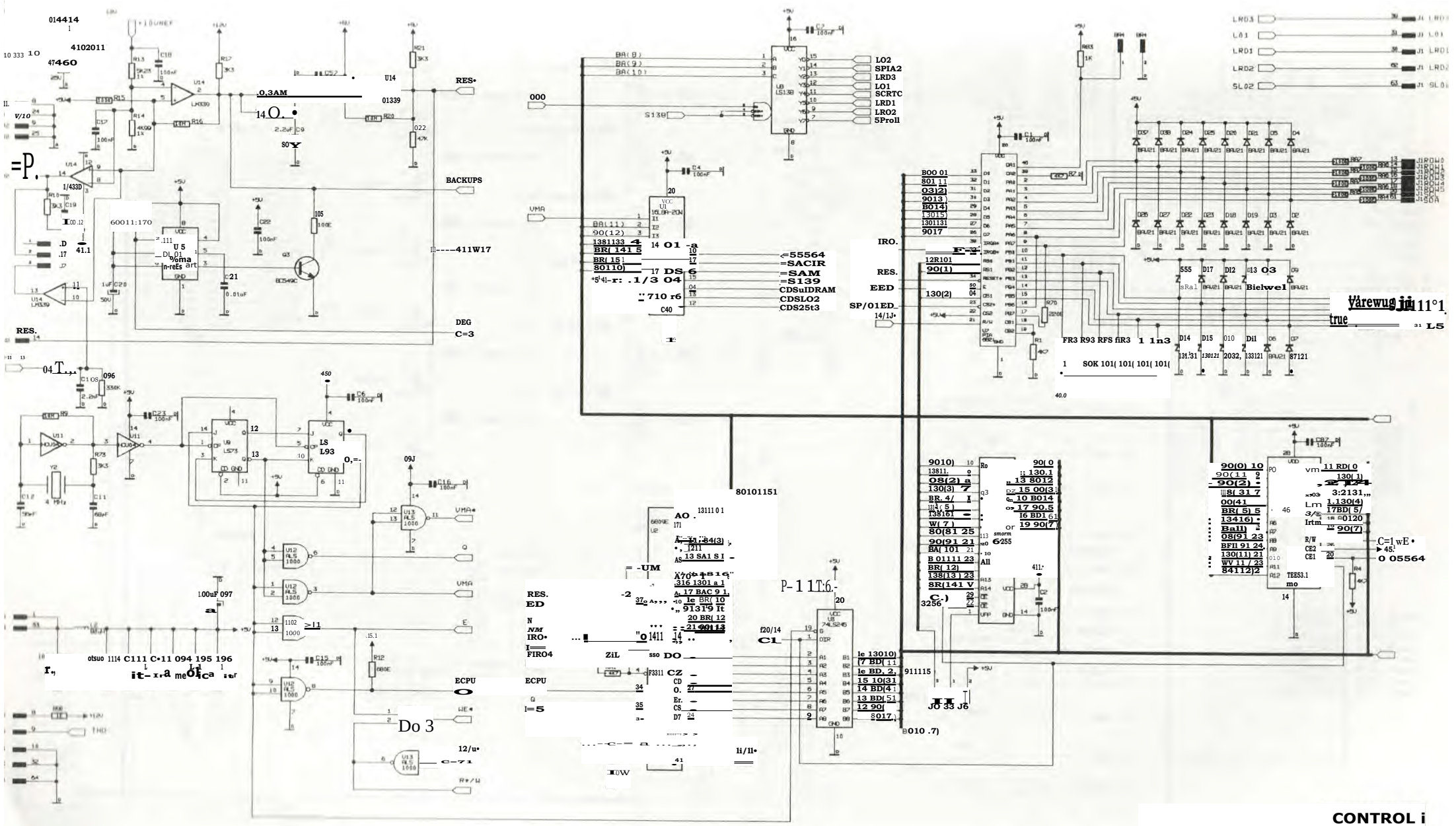
Order nuMber		Description	Item
V1011008	A	R CFFH 1E J ow25	R184,R70 ,R89
V1011998	A	R CFFH E1 K OW4	R56
V101204		R MF H 2E2 J OW5	11110
V101207		R MF H 3E9 J OW5	8109
V101208		R MF H 4E7 J OW5	R36
V101212		R MF H 10E J OW5	R127,R136,R195,R34 ,R35 ,R53
V101216		R MF H 22E J OW5	11187,R72
V101221		R MF H 56E J OW5	R39
V101222		R MF H 68E J OW5	8133
V101223		R MF H 82E J OW5	R54
V101224		R MF H100E J OW5	R1 ,R102,R111,R112,R117,R131, R166,R169,R57 ,R71 ,R90
V101226		R MF 11150E J OW5	R118
V101228		R MF H220E J OW5	R196,R55
V101231		R MF H390E J OW5	R142
V101232		R MF H470E J OW5	R192,R37 ,R59 ,R61 ,R64
V101233		R MF H560E J OW5	R105,R116,R134
V101234		R MF H680E J OWS	R139,R68
V101235		R MF H820E J OW5	R108,R140
V101236		R MF H 1K J OW5	R128,R172,R179,R190,R194,R197, R40 ,R63
V101238		R MF H 1K5 J OW5	11113,1150
V101240		R MF H 2K2 J OW5	R100,R101,R182,R186,R22 ,R48
V101244		R MF H 4X7 J OW5	R107,R141,R174,R176,R5 ,R6
V101245		R MF H 5K6 J OW5	R180,R60 ,R62 ,R65
V101246		R MF H 6K8 J OW5	R188,R30
V101248		R MF H 10K J OW5	R10 ,R12 ,R151,R152,R154,R155, R157,R158,R16 ,R160,R161,R162, R163,R164,R167,R168,R173,R175, R183,R185,R189,R19 ,R20 ,R201, R202,R31 ,R47 ,R69 ,R7 ,R9 , R95 ,R97
V101249		R MF H 12K J OW5	R177,R178,R92
V101250		R MF H 15K J OW5	11171
V101251		R MF H 18K J OW5	R114
V101252		R MF H 22K J OW5	R115,R135,R32
V101254		R MF H 33K J OWS	R17
V101255		R MF H 39K J OW5	R8
V101256		R MF H 47K J OW5	R148,R149,R159,R165,R21 ,R24 , R66 ,R73
V101257		R MF H 56K J OW5	R11 ,11170,R26 ,886
V101258		R MF H 68K J OW5	R147
V101259		R MF H 82K J OW5	R28 ,1167
V101260		R MF H1OOK J OW5	R144,R181,R3 ,R4
V101261		R MF 11120K J OW5	R146
V101263		R MF H180K J 0W5	R18
V101264		R MF H220K J OW5	R2
V101266		R MF H330K J OW5	R25 ,R29
V101268		R MF H470K J OW5	R33
V101270		R MF H680K J OWS	R27
V101272		R MF H 1M J OW5	R15
V1012918	A	R CFFH E47K OW5	R38
V102328		R MF H220E J 2W5	R191
V102330		R MF H330E J 2W5	R106
V1026047		R MF H 11K F OW6	R143
V1026297		R MF H 20K F OW6	R14 ,11145
V1026406		R MF H 2K4 F OW6	R123
V1026426		R MF H 2K74F OW6	R124
V102904		R MF H 2E2 J 1W6	11126

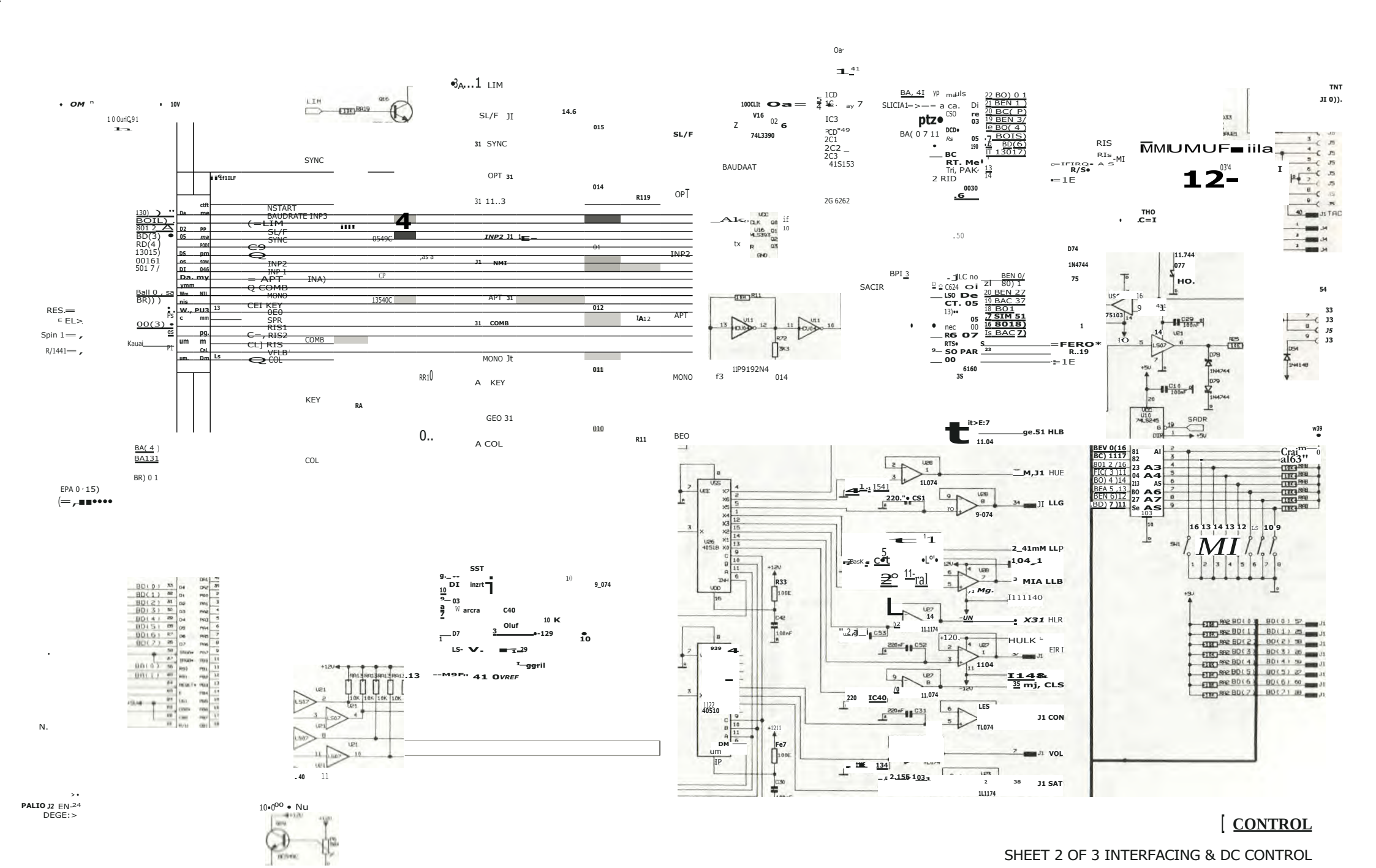
Order number		Description	Item
V102916		R MF H 22E J 1W6	R193
V102921		R MF H 56E J 1W6	8130
V102933		R MF H560E *J* 1W6	R58
V102935		R MF H820E J 1W6	R49
V1035224		R WW R 6E8 K 4W E6	R103
V1035483		R WW R 1K K 4W E6	R119
K1046701		R HV H 4M7 J 1W 10000	R129,R41
C106511		R TWW H100E K *2W* D2OTC	P4
V106730	*	R TCE H 20K K OW5 SlOTS	P3
V106732		R TCE H 50K K OW5 SlOTS	P5
V106733		R TCE H100K *K* OW5 SlOTS	P2
V106822		R TCE V 50E K OW5 SlOSS	P10
V106825		R TCE V500E K OW5 SlOSS	P1
V106830		R TCE V 20K K OW5 SLOBS	P7 ,P8 ,P9
V107033		R TCE V100K M OW5 S7 SS	P11
C1113719		C EL RA1000M M 50E3 105	C54
V1114159		C EL RA 10M M160E2 85	C35
V1114169		C EL RA 10M 141350E2 105	C20
V1114531		C EL RA1000M M 6E2 85	C104
V111470		C EL RA1000M M 16E2 85	C89
V111477		C EL RA 100M M 25E2 85	C102,C13 ,C17 ,C24 ,C74 ,C97
V1114789		C EL RA 220M M 25E2 85	C18 ,C50 ,C98
V1114855		C EL RA 22M M 50E2 85	C56
V1114869		C EL RA 47M M 40E2 85	C99
V1114879		C EL RA 100M M 35E2 105	C55 ,C96
V111494		C EL RA 10M M 63E2 85	C33 ,C75 ,C77
V1115109		C EL RA 22M M 25E2 105	C32 ,C95
V1115469		C EL RA 1M M 50E2 105	C19
V1115485		C EL RA 2M2M 50E2 85	C115
V1115509		C EL RA 4M7M 63E2 105	C82
V111633		C EL RA4700M M 35E4 85	C57
V112362		C N750M2 100P G 63E2	C8
V1127741		C Z5U MU 100N Z100E2 85	C116,C117
V1127830		C X7R MU 100N K 50E2 125	C103,C107
C112837		C CE DI 10N S400E3	C67
V114050		C POMERA 470N K250E9 85	C58
V114055		C POMERA 1M2K250E9 85	C61
V114080		C POMERA 10N K 63E2 85	C10 ,C101,C105,C112,C28 ,C49 , C7 ,C85 ,C86 ,C9
V114081	*	C POMERA 15N K 63E2 85	C15 ,C93
V114082		C POMERA 22N K 63E2 85	C88
V114088		C POMERA 100N K 63E2 85	C1 ,C100,C106,C2 ,C27 ,C3 , C4 ,C5 ,C53 ,C6 ,C84 ,C92
V114089		C POMERA 150N K 63E2 85	C51
V114090		C POMERA 220N K 63E2 85	C80 ,C81
V114091		C POMERA 330N K 63E2 85	C90 ,C91
V114092		C POMERA 470N K 63E2 85	C26 ,C29 ,C52 ,C71 ,C83 ,C94
V114094		C POMERA 680N M 50E2 85	C113
V114096		C POMERA 1M K 50E2 85	C30 ,C72 ,C73
V114480		C PO RA 1N M100E2 100	C11
V114483		C PO RA 3N3M100E2 100	C111,C16
V114484		C PO RA 4N7M100E2 100	C12
V114512		C POMERA 4M7K100E11 85	C22
C114636		C PPMERA 47N M162E11 HV	C23
V115000	*	C PPMERA 15N J102E9 HV	C21
V1150103		C PPMERA 3N3J162E9 HV	C59 ,C60
V116304		C PP RA 6N8H 63E2 85	C87
V131411		Q BC549C N SS TO92	Q1 ,Q17 ,Q2 ,Q21 ,Q3 ,Q4 45 ,48
V1314131		Q BC557B P SS TO92	Q6
V1314182		Q BC559C P SS TO92	Q20
V131426		Q BC337 N SS TO92	Q11
V1316211		D 1N4148 SW D035	D39 ,D42 ,D43 ,D44 , D5C

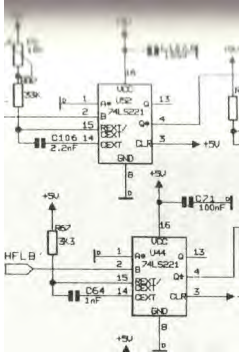
Order nunber	Description	Item
V131622	D BAX16 SW D035	D1 ,D14 ,D16 ,D17 ,D2 ,D3 , D5 ,D6 ,D7
V131627	D BAV21 SW 0035	D20 ,D21 ,D22 ,D23 ,D26 ,D27 , D28 ,D29 ,D34 ,D36 ,D37 ,D40 , D41 ,D45 ,D46 ,D47
V131643	D 1N4151 SW D035	D51 ,D52
C131646	D 1N4007 R D041	D30 ,D33
V131716	D ZEN 5V1 OW5 C D035	D38
C131788	D ZEN 1OV 2W5 C SOD81	D48
V131912	D BYV95C FSR 90D57	D24 ,D35 ,D8 ,D9
V131917	D BY228 R SOD64	D10 ,D32 ,D49
C132071	BG2097-641-502	Al (Tripler)
V132194	U 072 TL DIPS P	010
V132504	Q 2N2369A N SS T018	Q25
V132516	Q BF422 N SS T092	Q13
V132517	Q B0X84 N P T0220	Q10 ,Q14
V132552	Q BF423 P SS T092	Q12
V132554	Q BC546B N SS T092	Q22
C132562	Q BC639 N P T092	Q15 ,Q9
V132572	Q BU2508A N P SOT93	Q18
V132578	Q BD650 DP P T0220	Q16
V132592	Q BUT12A P T0220	Q23 ,Q7
V132611	Q 1RF540 FN P T0220	Q24
V132760	U 3654 TDA SOT131 P	08
V132761	U 8432 TDA DIP24 P	06
V1330145	Q ACC MNTG PAD T018	032
C133054	Q ACC CLIPS SOT93	004
C1330541	Q ACC CLIPS SOT93	013
V1330542	Q ACC CLIPS T0220	001
C133055	Q ACC ISO MICA 25X 28	003
V134018	U 431C TL T092 P	D15
V134114	U 1458 DIP8 P	U1 ,U4
V134117	U 074 TL DIP14 P	09
C137296	U 494 TL DIP16 P	03
V137377	U 4538B DIP16 P	02
V137394	U 4093E DIP14 P	Oil
V137719	U 2595 TDA DIP18 P	05
V306100	CH AX NS 9 OH	
V3061282	CH AX NS 4.7 DH	Ll
V3061323	CH AX S 10 05	L7
C3061562	CH AX NS 1 MH	12 ,L6
C3061582	CH AX NS 1.5 MH	L10
V306222	CH TOR V 80 OH 2A	L9
C306724	T DRV 4043/59	T1 ,T2
C313286	J MD1 MBT P 3 E1SN	J4
03133921	J MD JMP P 1 E1SN	J4 ,055
V3133931	J MD1 MBT P 2 E1AU	J6
C313590	J EUR3C MSS P32 E1C2 S1.6	J1 ,J2
C313613	J LV MWT P 6 R4M8	J3
V6020941	HEATSINK DEFL CVM2137 00	N2
V6024171	HEATSINK EHT CVM2000 OO	N1
V602950	TESTPIN 00	TP1 ,TP12,TP14,TP15,TP16,TP17, TP19,TP2 ,TP20,TP21,TP3 ,TP6 , TP7 ,TP8 ,TP9
V6710056	SPO BRIDGE 3.70 MH 00	L3
C671006	T EHT CD351 03	T3
V6710074	TRF HOR DEFL CVM70 01	T4
C7123024	WHSR 7 X 3.25BAK1.00 02	060
V750418	SPRING EHT TRANSFO 00	025
V752145	PC DEFL/EHT CVM20XX 03	PCB1
C773173	CH 20.0 MH 02	L4
V7753135	ADJ LIN UN CVS 01	L5


P2
U31
U32
U36
U1
U2
U6
C92
C93
C97
C29
C16
C17
R86
C19
U11
U16
U17
U49
U24
C101
R7
D36
D31
RA15
P4
P7
D37
P97
D53
ANALOG CONNECTOR
52131E31

Control


014414
4102011
47460
RES.
BACKUPS
DEG
C=3
RES.
ECPU
LO2
SPIA2
LRD3
LO1
SCRTC
LRD1
LRO2
5Proll
=SACIR
=SAM
=S139
CDSuIDRAM
CDSLO2
CDS25t3
IRO.
RES.
EED
SP/01ED
Värewug
true
L5
SOK 101(101(101(101(
80101151
LS
L93
09J
VMA
Q
E
ECPU
WE
12/u
C=71
R/W
CONTROL i
SHEET 1 OF 3 PROCESSING
MODIFICATIONS RESERVED 16JAN91


SYNC
NSTART
BAUDRATE INP3
SL/F
SYNC
INP2
INP 1
APT
MONO
KEY
COMB
RIS1
VFLB
COL
SL/F
OPT
INP2
APT
MONO
BEO
SST
inzrt
arcra
C40
Oluf
10 K
VREF
HUE
LLG
MIA LLB
HLR
HULK
EIR I
J1 CON
J1 VOL
J1 SAT
CONTROL
SHEET 2 OF 3 INTERFACING & DC CONTROL
MODIFICATIONS RESERVED 16JAN91



[CONTROL

SHEET 3 OF 3 CHARACTER GENERATOR
MODIFICATIONS RESERVED 16JAN91

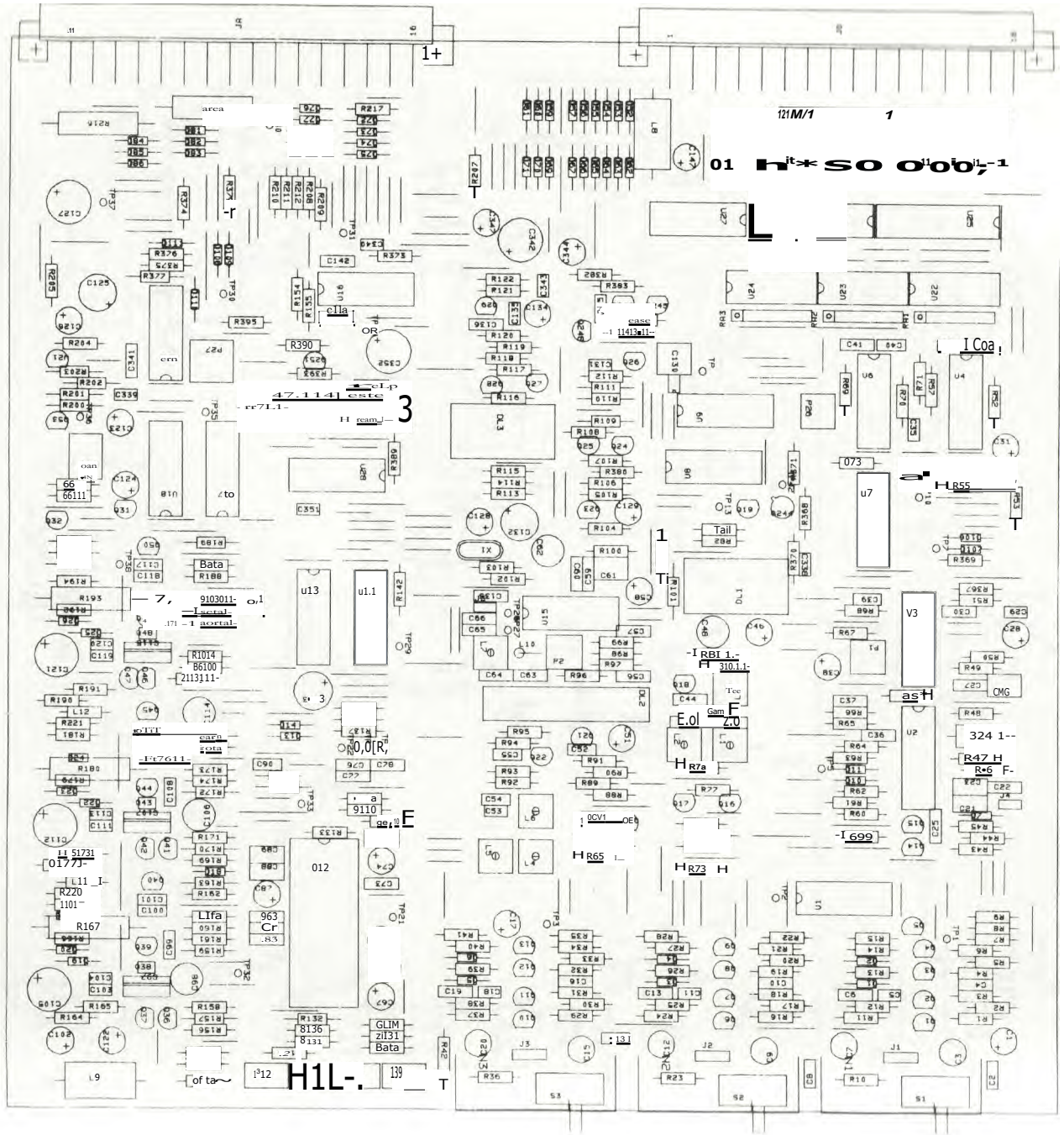
PARTS LIST
CONTROL
Order number of a complete board : V5628361

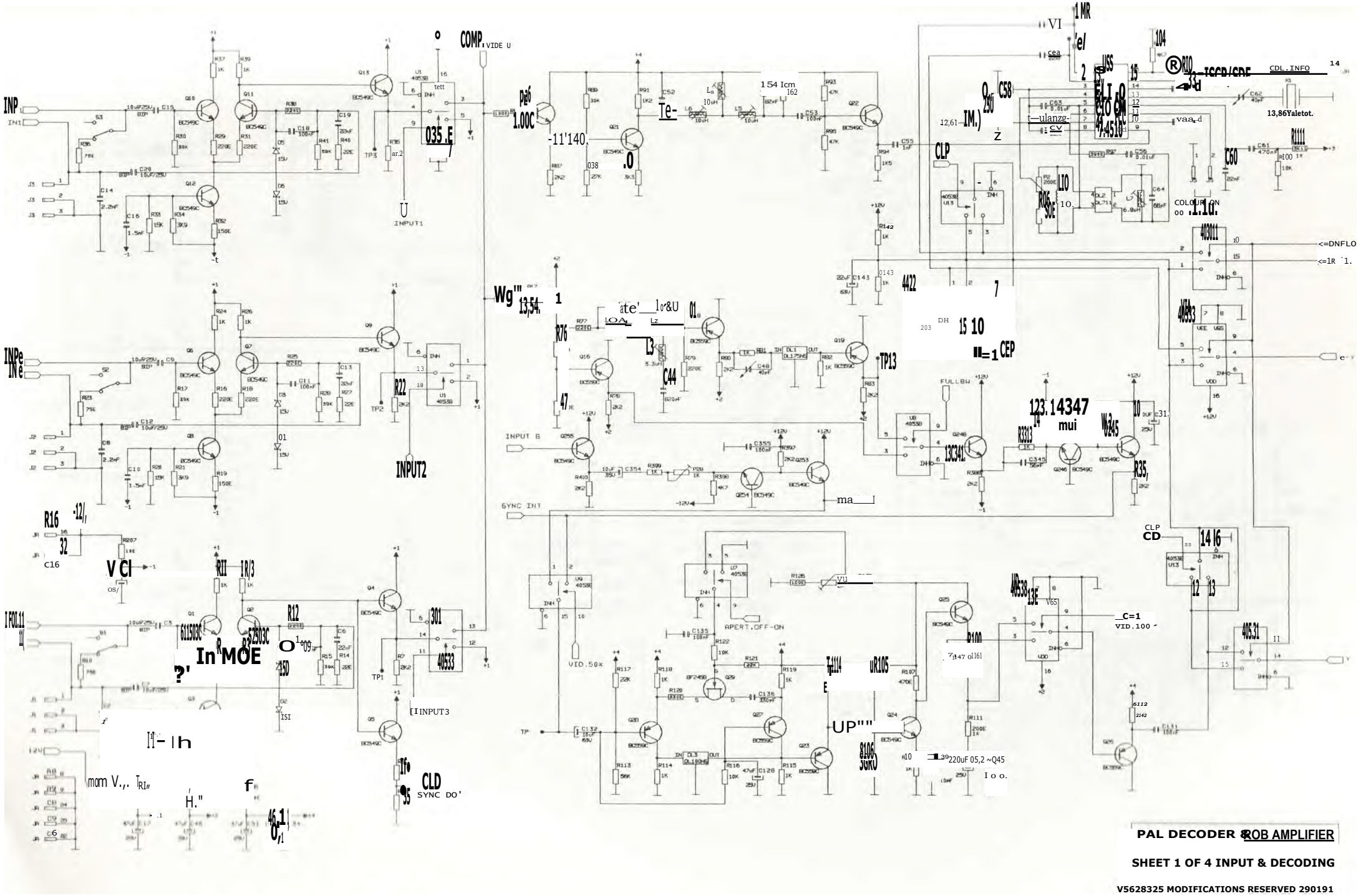
Order number		Description	Item
V1011008	!	R CFFH 1E J OW25	R80
V101212		R MF H 10E J OWS	R25
V101224		R MF H100E J OW5	R27 ,R33 ,R40 ,R5 ,R60 ,R61 , R62 ,R63 ,R89 ,R90
V101228		R MF H220E J OWS	R69 ,R70
V101229		R MF H270E J OW5	R52 ,R53 ,R54
V101232		R MF H470E J OW5	R74
V101234		R MF H680E *J OW5*	R12 ,R91
V101236		R MF H 1K J OW5	D49 ,R34 ,R35 ,R55 ,R83
V101240		R MF H 2K2 J OW5	R41 ,R43 ,R44 ,R45 ,R46 ,R47 , R48 ,R50 ,R51 ,R57 ,R75
V101242		R MF H 3K3 J OWS	R10 ,R17 ,R21 ,R67 ,R72 ,R9
V101244		R MF H 4K7 J OW5	R1 ,R30 ,R39 ,R4 ,R68 ,R7 , RB8 ,R92
V101248		R MF H 10K J OW5	R42 ,R64 ,R87
V101249		R MF H 12K J OWS	R66
V101254		R MF H 33K J OWS	R21 ,R82
V101256		R MF H 47K J OW5	R84
V101260		R MF H100K J OWS	R15 ,R23
V101265		R MF H270K J OWS	R19
V101266		R MF H330K J OWS	R86
V101272		R MF H 1M J OWS	R18
V101284		R MF H 10M J OW5	R11 ,R16 ,R20 ,R73
V101531		R MF H390E F OW4 E2	R93
V1026297		R MF H 20K F OW6	R.65
V1026676		R MF H 4K99F OW6	R14 ,R28 ,R31 ,R32
V1026686		R MF H 5K23F OW6	R13
V106729		R TCE H 10K K OWS SlOTS	P5
V106832		R TCE V 50K K OWS SlOSS	P6
V107024		R TCE V200E M OWS S7 SS	P4
V107025		R TCE V500E M OW5 S7 *SS*	P1 ,P2 ,P3
V111477		C EL RA 100M M 25E2 85	C24 ,C89 ,C90 ,C91 ,C92 ,C93 , C94 ,C95 ,C96 ,C97
V1115119		C EL RA 47M M 25E2 105	C60
V1115469		C EL RA 1M M 50E2 105	C20
V1115485		C EL RA 2M2M 50E2 85	C9
V112238		C NPO MI 47P G 63E2	C112,C66
V112239		C NPO MI 56P G 63E2	C12 ,C13
V112240		C NPO MI 68P G 63E2	C11 ,C14
V112241		C NPO MI 82P G 63E2	C65
V112243		C NPO MI 120P J 63E2	C32
V112366		C N750MI 220P G 63E2	C114
C112763		C CE MI 10N U 63E2	C21 ,C40
V1127830		C X7R MU 100N K 50E2 125	C1 ,C10 ,C101,C103,C104,C107, C15 ,C16 ,C17 ,C18 ,C19 ,C2 C22 ,C23 ,C25 ,C26 ,C28 ,C29 C30 ,C35 ,C36 ,C37 ,C38 ,C39 C4 ,C41 ,C42 ,C43 ,C44 ,C45 C46 ,C5 ,C57 ,C6 ,C69 ,C7 C70 ,C71 ,C72 ,C73 ,C74 ,C75 C76 ,C77 ,C78 ,C8 ,C80 ,C82 C83 ,C84 ,C85 ,C86 ,C87 ,C98 C99
V112817		C CE DI 220P M400E2	C105
V114080		C POMERA 10N K 63E2 85	C88 ,R22
V114082		C POMERA 22N K 63E2 85	C109,C110,C111
V114088		C POMERA loom K 63E2 85	C67
V114090		C POMERA 220N K 63E2 85	C31 ,C33 ,C34 ,C48 ,C49 C51 ,C52 ,C53 ,C54 .C55

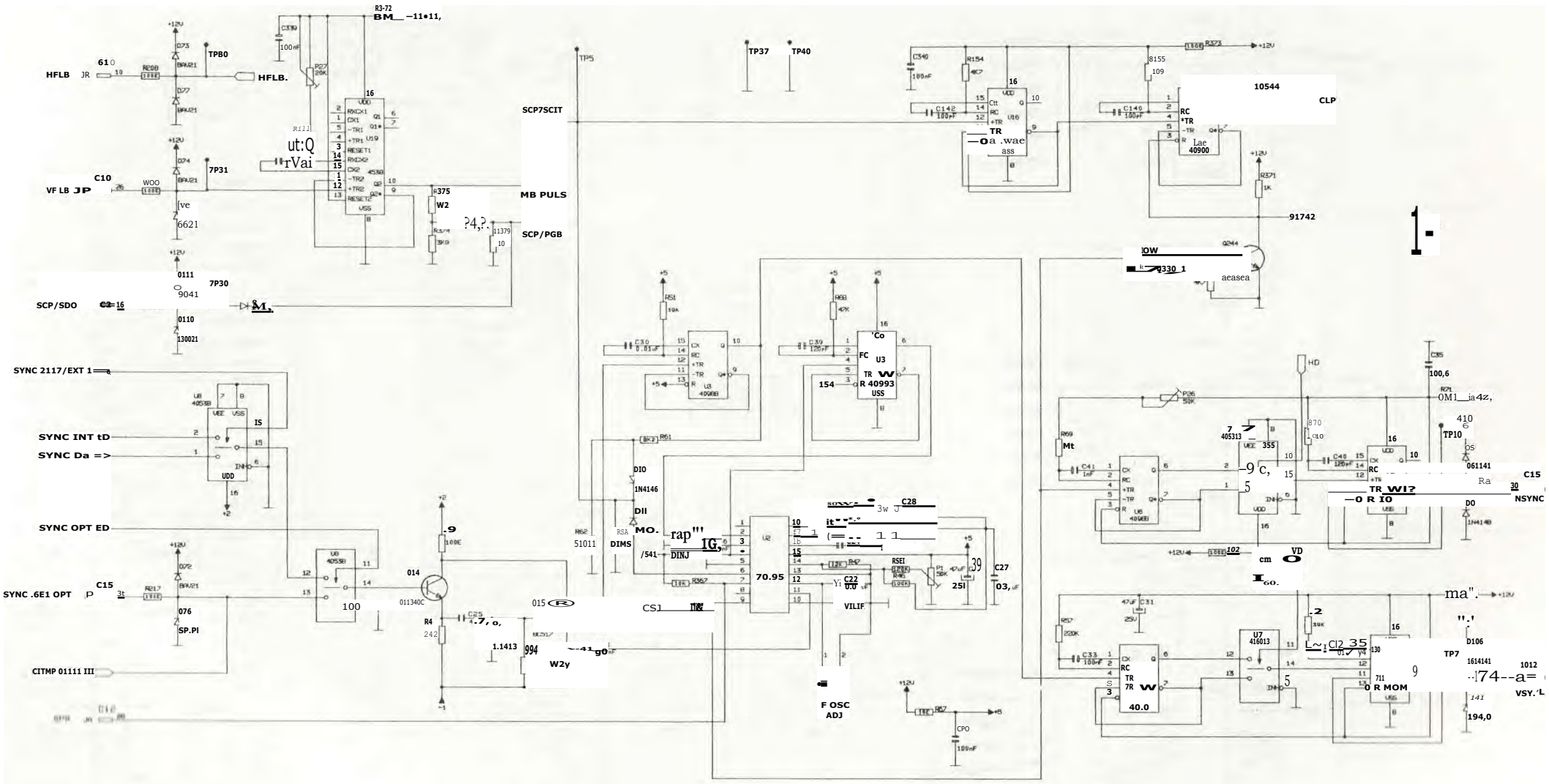
Order number	Description	Item
V114480	C PO RA 1N M100E2 100	C115,C63 ,C64
V114482	C PO RA 2N2M100E2 100	C106,C108
V114483	C PO RA 3N3M100E2 100	C113
V131411	Q BC549C N *SS* TO92	Q10 ,Q11 ,Q12 ,Q13 ,Q14 ,Q15 , Q16 ,Q19 ,Q20 ,Q21 ,Q29 ,Q3 , Q4 ,Q5 ,Q6 ,Q7 ,48 ,Q9 R59
V1314182	Q BC559C P SS TO92	Q22
V1315041	D BAT41 SCR D035	D72 ,D73
V1315046	D BAT86 SCE D034	D84
V131620	D 1N6263 SCR D035	D28
V1316211	D 1N4148 SW D035	D41 ,D42 ,D45 ,D46 ,D48 ,D52 , D54 ,D55 ,D60 ,D61 ,D62 ,D64 , D65 ,D66 ,D68 ,D70 ,D71 ,D80 , D81 ,D82 ,D83
V131627	D BAV21 SW D035	D10 ,D11 ,D12 ,D13 ,D14 ,D15 , D16 ,D17 ,D18 ,D19 ,D2 ,D20 , D21 ,D22 ,D23 ,D24 ,D25 ,D26 , D27 ,D3 ,D31 ,D32 ,D33 ,D34 , D35 ,D36 ,D37 ,D38 ,D4 ,D5 , D6 ,D7 ,D8 ,D9
V131716	ZEN 5V1 OW5 C 10035	D53 ,D67 ,D69
V131729	ZEN 4V7 OW5 C D035	D57
V131742	ZEN 6V8 OW5 C 0035	R56
V131757	ZEN 3V9 OW5 C D035	D63
V131779	ZEN 15V 1W3 C D041	D74 ,D75 ,D76 ,D77 ,D78 ,D79
V132504	2N2369A N SS TO18	Q18
V132768	08 DAC DIP16 P	U25
V1330145	ACC MNTG PAD TO18	0014
V134005	339 LM DIP14 P	U14
V1340602	16V8AS GAL 25DIP20 PR	Ul
V1341091	555 TLC DIP8 P	U15
V134117	074 TL DIP14 P	U23 ,U27 ,U28
C137207	1489 DIP14 P	U17
V1372303	5050 DOD DIP28 P	U41
V137233	68A09E DIP40 P	U2
V1372342	6845 IMDIP40 P	U31
C137235	6850 IMDIP24 P	U18 ,U24
C137236	6821 1MDIP40 P	U19 ,U20 ,U7
V137242	SRAM 2KX8 -20DIP24 P	032
V137263	NVRAM anal DIP28 P	U6
V137311	4051B DIP16 P	U22 ,U26
V137346	74LS74A DIP14 P	U37 ,U42
C137347	74LS132 DIP14 P	U51
V137352	741S00 DIP14 P	U40
C137360	74LSO2 DIP14 P	U39 ,U47
C137365	74LS157 DIP16 P	U34 ,U35 ,036 ,U43
V1374393	74LS393 DIP14 P	U16
C137485	74LS73 DIP14 P	U9
C137490	74LS138 DIP16 P	U8
V137493	74LS245 DIP20 P	010 ,U3 ,U33
C137494	74LS86 DIP14 P	U38
C137501	7418153 DIP16 P	U49
V137508	7407 DIP14 P	021
V137512	74LS221 DIP16 P	U44 ,U50 ,U52
V137513	74ALS574 DIP20 P	U46
V137515	74ALS100QA DIP14 P	012 ,U13
V1375182	74E01304 DIP14 P	Ull
C137700	U 4053B DIP16 P	U48
V1405472	R AB 4 4K7 G OW2 SIPS	AR15
V1407103	R AB 6 10K G OW2 SIP7	AR13,AR3
V1409103	R AB 8 10K G OW2 SIP9	*AR2 ,ARS*
V1409472	R AB 8 4K7 G 0W2 SIP9	

Order number	Description	Item
V1508101	R AI 4 100E G OW3 SIP8	AR14,AR4 ,AP5 ,AR6 ,AR7
V1508103	R Al 4 10K G OW3 SIPS	ARI1,AR12,AR18,AR19
V1508561	R AI 4 560E G OW3 SIP8	AR10,AR16,A1117,AR9
V306222	CH TOR V 80 UR 2A	L2
V306810	X 4.915200 MHZ HC43 30	Y1
C306846	X 4.000000 MHZ HC43	Y2
V313253	J UO.6 FBT P28 E1SN SPG	0009,0010
C313286	J MD1 MET P 3 E1SN	BPI ,BP2 ,BP3 ,BR4 ,J7
C3133921	J MD JMP P 1 E1SN	0011
V3135035	J D ACC SCR_L U/U L 8	0007
0313516	J DE FBS P 9	J3 ,J5
V313517	J DE MBS P 9	J4
V313525	J EUR3C MBS P64 E1C2 S1.6	01
C313551	J U0.3 FBT P20 E1SN SPG	0008
C313590	J EUR3C MBS P32 E1C2 S1.6	J2
V5681581	SOFT CVM20XX VERSIE 2 02	U4
V602510	FIXING PIECE CVM20XX 00	0012
V602950	TESTPIN 00	TP1 ,TP10,TP11,TP13,TP14,TP15, TP16,TP17,TP2 ,TP3 ,TP4 ,TP5 , TP6 ,TP7 ,TP8 ,TP9
V752131	PCB C&S CHAR GEN 02	0001
V775018	COIL WH-BLA-RED-BLA Y	Ll

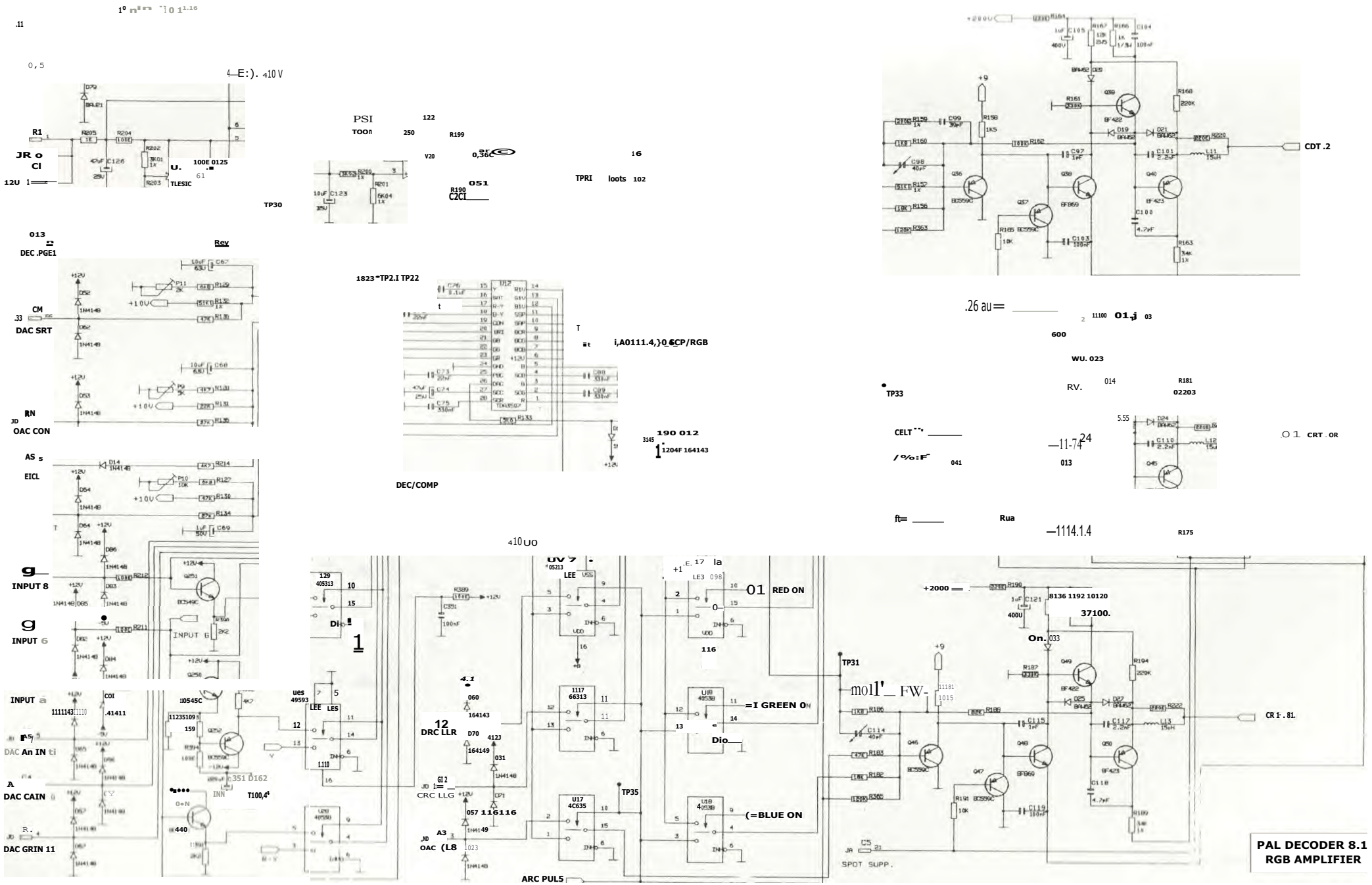
PAL DECODER & RGB AMPLIFIER



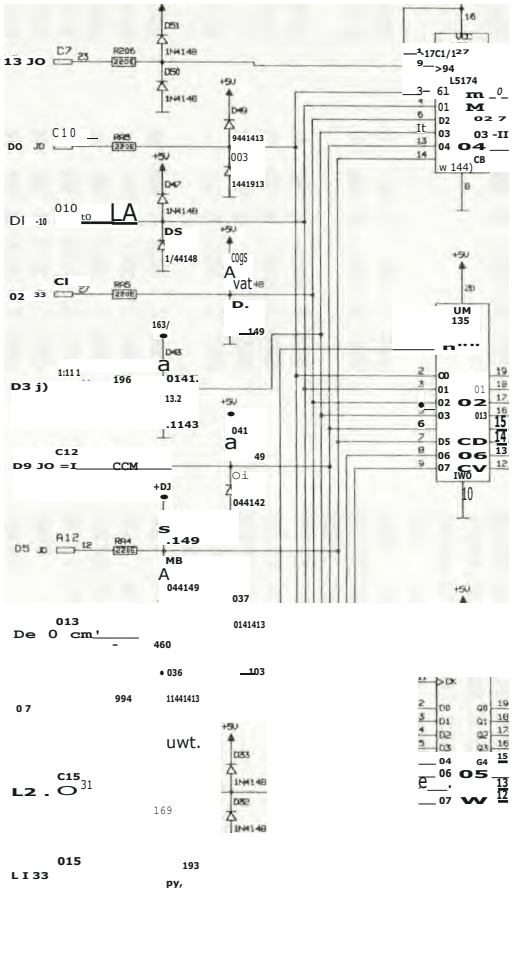

INP
INPUT1
INPUT2
INPUT3
COMP. VIDE U
SYNC INT
INPUT 6
APERT.OFF-ON
CLD
SYNC DO'
PAL DECODER & ROB AMPLIFIER
SHEET 1 OF 4 INPUT & DECODING
V5628325 MODIFICATIONS RESERVED 290191

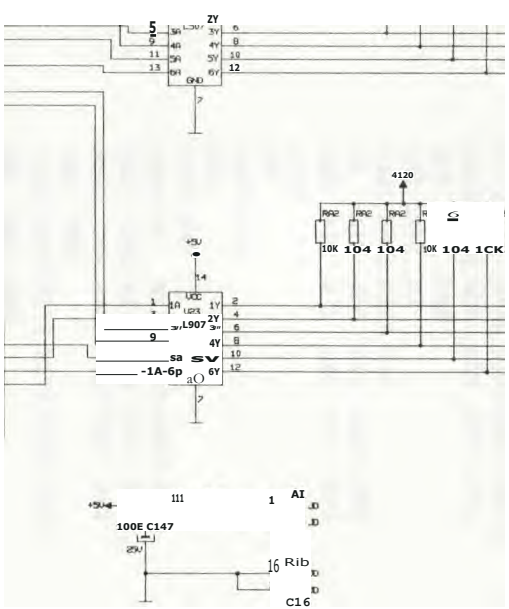


V5628325 MODIFICATIONS RESERVED 290191



V5628325 MODIFICATIONS RESERVED 290191





PAL DECODER & RGB AMPLIFIER

SHEET 4 OF 4 DIGITAL PART

V5628325 MODIFICATIONS RESERVED 290191

PARTS LIST
PAL DECODER & RGB AMPLIFIER
Order number of a complete board : V5628324

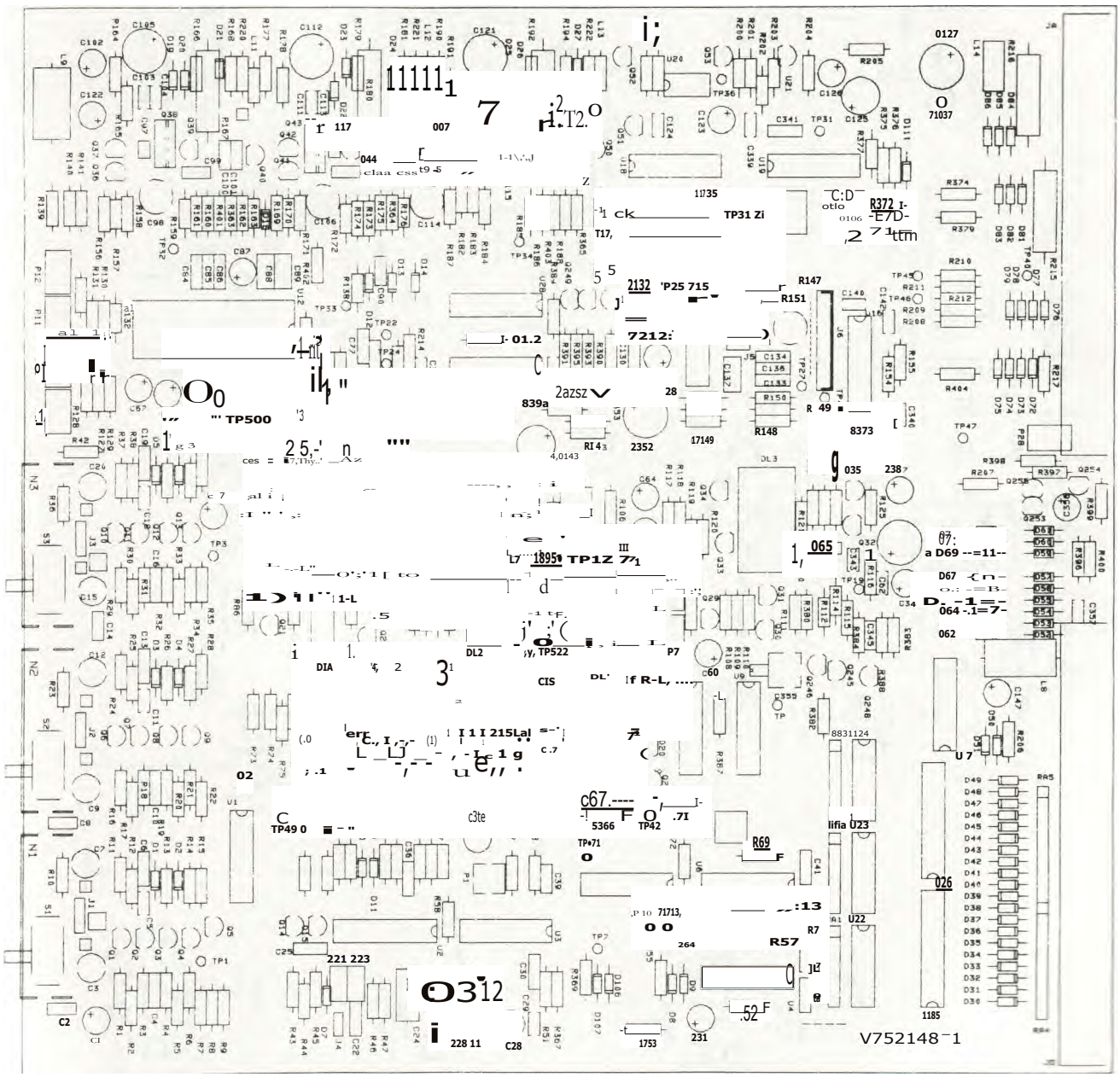
Order number	Description	Item
C1011289	R CFFH220E J OW25	R164,R177,R190
V1011369	R CFFH 1K J OW25	R166,R179,R192
V101200	R MF H 1E J OW5	8205
V101212	R MF H 10E J OW5	R141,R207,P42 ,R67 ,273 ,R85 , R99
V101216	R MF H 22E J OW5	R14 ,R27 ,R40
V101220	R MF H 47E J OW5	R198,R199
V1012231	R MF H 75E J 0W5	R10 ,R23 ,236
V101224	R MF H100E J OW5	R126,12204,R208,R209,R210,R211, R212,R217,R369,R372,R373,R376, R389,R394,R53 ,R55 ,R59 ,271 , R72 ,R74 ,R86
V101226	R MF H150E J OW5	R19 ,R32 ,R4
V101227	R MF H180E J OW5	R401,R402,R403,R96
V101228	R MF H220E J OW5	R1 ,R12 ,R16 ,218 ,2206,225 , R29 ,R3 ,R31 ,R38 ,237 ,R79
V101230	R MF H330E J OW5	8120
V101231	R MF 14390E J OW5	R97
V101232	R MF H470E J OW5	R107,R75
V101234	R MF H680E J OW5	RA9
V101235	R MF H820E J OW5	R137,R48
V101236	R MF H 1K J OW5	2108,211 ,R114,R115,R118,R119, R13 ,R142,R143,R24 ,226 ,R37 , R383,R39 ,R399,R407,R81 ,R82
V101237	R MF H 1K2 J OW5	R91 ,R92
V101238	R MF H 1F5 J OW5	R158,R163,R171,R176,R184,R189, R9 ,R90 ,R94
V101239	R MF H IK8 J OW5	R173,R186,R222,R393,R404,R408, R98
V101240	R MF H 2K2 J OW5	R104,R112,R139,R22 ,R35 ,8382, R384,R387,R388,R390,R391,R395, R396,R397,R400,R43 ,R45 ,R64 , R7 ,R78 ,280 ,R83 ,R87
V101243	R MF H 319 J OW5	R21 ,R220,R34 ,R374,R6 ,R62
V101244	R MF H 4K7 J OW5	R102,R128,R154,R214,R370,2380, R392,R398,R50 ,R66
V101245	R MF H 5K6 J OW5	R133,R221
V101246	R MF H 6K8 J OW5	R127,R129
V101247	R MF H 812 J OW5	R375,R61
V101248	R MF H 10K J OW5	R100,R116,R122,R165,R178,R191, R368,R371,R379,R405,R63
V101249	R MF H 12K J OW5	R47 ,R65
V101250	R MF H 15K J OW5	R20 ,233 ,R5 ,R60
V101251	R MF H 18K J OW5	R156,R169,R182,R406
V101252	R MF H 22K J OW5	R117,R121,R131
V101253	R MF H 27K J OW5	R28
V101254	R MF H 331 J OW5	R105
V101255	R MF H 39K J OW5	R106,R15 ,217 ,R2 ,R28 ,R30 R41 ,R51 ,252 ,R69 ,289
V101256	R MF H 47K J OW5	R130,R136,R411,R68 ,R93 ,R95
V101257	R MF H 56K J OW5	R113
V101259	R MF H 82K J OW5	R135,R157,R170,R183,R377
V101260	R MF H100K J OW5	R162,R175,R46
V101261	R MF H120K J OW5	R58
V101262	R MF H150K J OW5	R134,R365
V101264	R MF H2201 J OW5	2168,2181,2194,257
V101265	R MF H270K J OW5	R364
V101266	R MF H330E J OW5	R161,R174,R187,R363
V101282	R MF H 6M8 J (745	R44

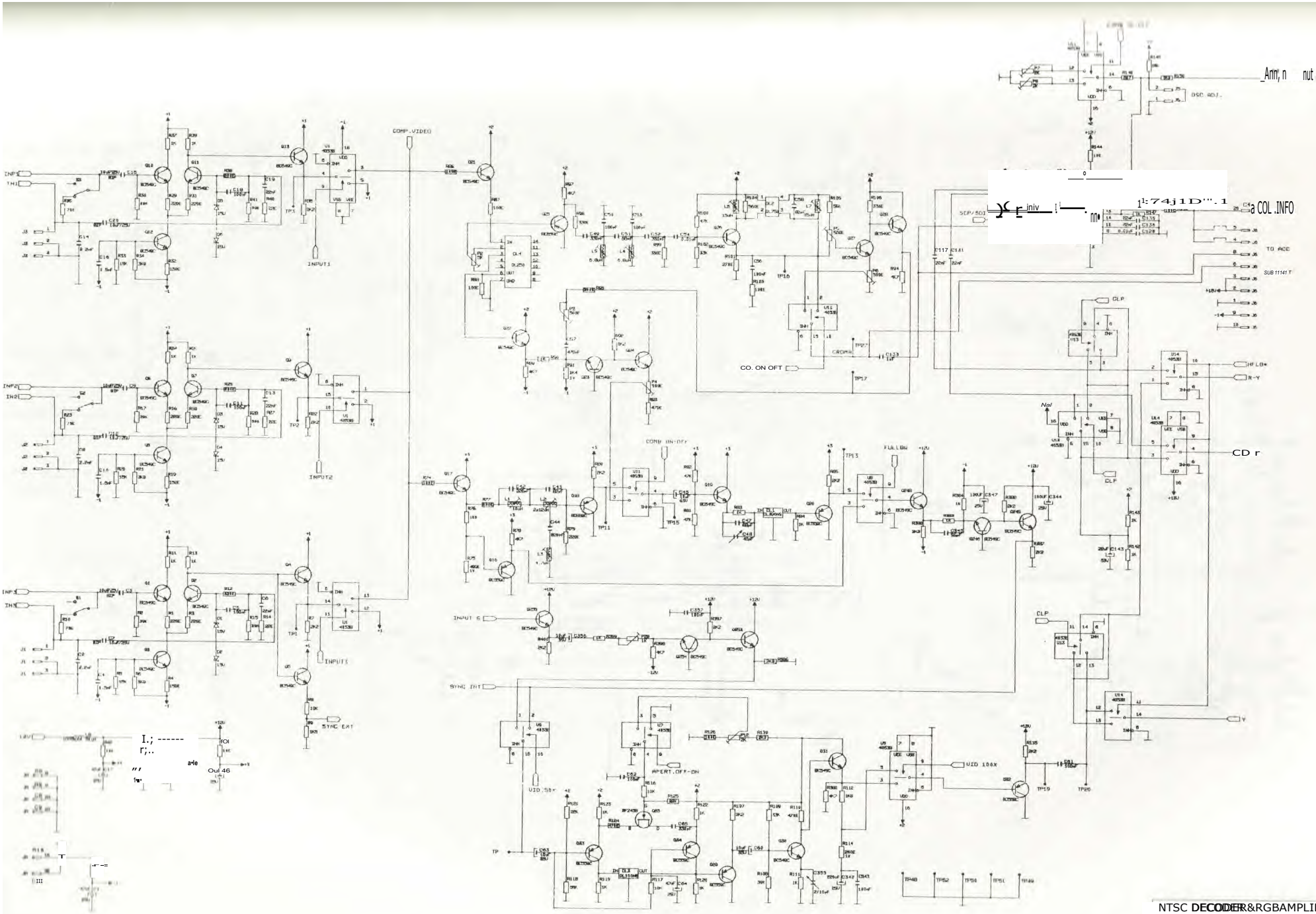
Order number	Description	Item
V101538	R ME' H 1K5 F OW4 E2	R76
V101548	R DO' H 10K F 0W4 E2	RA10
V101560	MF 11100K F OW4 E2	RA09
V102336	MF H 1K J 2W5	R215,R216
V1023481	MF H 12K J 2W5	R167,R180,R193
V1026006	R MF H 1K F OW6	R203
V1026206	R MF H 1K62F OW6	R160
V1026256	R MF H 1K82F OW6	R109
V1026295	R. MF H200E F OW6	R111,R159,R172,R185
V1026377	R MF H 24K3 F OW6	R70
V1026466	R MF H 3K01F 046	8202
V1026517	MF H 34K F OW6	8138
V1026576	R MF H 3K92F OW6	8200
V1026680	R MF H 5K11F 0W6	8101
V1026687	R MF H 51K1 F OW6	R132
V1026756	MF H 6K04F OW6	8201
V1026816	MF H 6K98F OW6	R155
V1026823	MF H 71K5 F OW6	R188
V106732	TCE H 50K K OW5 S1OTS	P26 ,P27
V106826	TCE ✓ 1K K OW5 S1OSS	P28
V106827	TCE ✓ 2K K OW5 S1OSS	P12
V106828	R. TCE ✓ 5K K OW5 S1OSS	P9
V106829	TCE ✓ 10K K OW5 S1OSS	P10 ,P11
V107004	R. TCE 11200E M OW5 S7 TS	P2
V107012	TCE H 50K M OW5 S7 TS	P1
V111412	C EL RA 4A7M250E2 85	C127
V111474	C EL RA 1M M400E2 105	C105,C112,C121
V111477	C EL RA 100M M 25E2 85	C102,C134,C147,C344,C347,C87
V1114789	C EL RA 220M M 25E2 85	C342,C352
V111494	C EL RA 10M M 63E2 85	C124,C125,C129,C132,C354,C67
V1114959	C EL RA 22M M 63E2 105	C143
V1115109	C EL RA 22M M 25E2 105	C68
V1115119	C EL RA 47M M 25E2 105	C1 ,C122,C126,C128,C17 ,C31 , C38 ,C46 ,C51 ,C58 ,C74
V1115319	C EL RA 10M M 50E2 105	C123
V1115469	C EL RA 1M M 50E2 105	C69
V1115509	C EL RA 4147M 63E2 105	C28
V111679	C EL BRA 10M M 25E2 85	C12 ,C15 ,C20 ,C3 ,C7 ,C9
V1122191	C NPO MI 1P G500E2	C107,C115,C97
V112226	C NPO MI 4P7C 63E2	C100,C109,C118
V112232	C NPO MI 15P G 63E2	C116
V112233	C NPO MI 18P G 63E2	C345
V112234	C NPO MI 22P G 63E2	C99
V112237	C NPO MI 39P G 63E2	C108,C142,C64
V112241	C NPO MI 82P G 63E2	C52 ,C54
V112242	C NPO MI 100P G 63E2	C43
V112243	C NPO MI 120P J 63E2	C39 ,C40 ,C90
V1122510	C COG MU 1N J100E2 125	C356
V112362	C N750MI 100P G 63E2	C338
V112366	C N750MI 220P G 63E2	C140
V112367	C N750MI 270P G 63E2	C42
V112368	C N750MI 330P G 63E2	C136,C357
V1127385	C CE MI 820P K100E2	C44
C112743	C CE MI 2N2K 63E2	C101,C110,C117,C14 ,C2 ,C25 C8
C112747	C CE MI 4N7K 63E2	C37
V1127830	C X7R MU 100N K 50E2 125	C103,C104,C11 ,C111,C113,C119 C120,C131,C135,C18 ,C29 ,C33 C339,C34 ,C340,C343,C35 ,0351 C353,C355,C5 ,C50 ,C53
V114080	C PCMERA 10N K 63E2 85	C22 ,C27 ,C30 ,C341,C56 ,C63
V114082	C PCHERA 22N K 63E2 85	C13 ,C133,C19 ,C36 ,C57 ,C6 C65 ,C66 ,C73 ,C77 ,C78 ,C84 C85 ,C86

Order number	Description	Item
V114083	C POMERA 33N K 63E2 85	C32
V114084	C POMERA 47N K 63E2 85	C59 ,C60
V114088	C POMERA 100N K 63E2 85	C76
V114090	C POMERA 220N K 63E2 85	C21 ,C23
V114091	C POMERA 330N K 63E2 85	C75 ,C88 ,C89
V114092	C POMERA 470N K 63E2 85	C26 ,C61
V114096	C POMERA 1M K 50E2 85	C358
V114480	C PO RA IN M100E2 100	C41
V114481	C PO RA 1N5M100E2 100	C10 ,C16 ,C4
C1160505	C PP AX 4N7G160E6 85	C24
V117020	C TV 5 -45P 100	C130
V117024	C TH 4 -40P 100	C106,C114,C48 ,C62 ,C98
V131411	Q BC549C N *SS* TO92	Q1 ,Q10 ,Q11 ,Q12 ,Q13 ,Q14 , Q17 ,Q2 ,Q20 ,Q21 ,Q22 ,Q24 Q245,Q246,Q248,Q249,Q25 ,Q250, Q251,Q253,Q254,Q255,Q256,Q3 , Q32 ,Q4 ,Q5 ,Q53 ,Q6 ,Q7 , Q8 ,Q9
V1314182	Q BC559C P *SS* TO92	Q16 ,Q18 ,Q19 ,Q23 ,Q252,Q26 , Q27 ,Q28 ,Q31 ,Q36 ,Q37 ,Q41 , Q42 ,Q46 ,Q47
V1314651	Q BF245B FN SS TO92	Q29
V1315041	D BAT41 SCH D035	R103,W136
V1315046	D BAT86 SCH D034	D109,D114
V1316211	D 1N4148 SW D035	D10 ,D106,D107,D108,D11 ,D112, D113,D12 ,D14 ,D18 ,D30 ,D31 , D32 ,D33 ,D34 ,D35 ,D36 ,D37 , D38 ,D39 ,D40 ,D41 ,D42 ,D43 , D44 ,D45 ,D46 ,D47 ,D48 ,D49 , D50 ,D51 ,D52 ,D53 ,D54 ,D55 , D56 ,D57 ,D59 ,D60 ,D61 ,D62 , D63 ,D64 ,D65 ,D66 ,D67 ,D69 , D7 ,D70 ,D71 ,D8 ,D81 ,D82 , D83 ,D84 ,D85 ,D86 ,D9
V131627	D BAV21 SW D035	D110,D111,D72 ,D73 ,D74 ,D75 , D76 ,D77 ,D78 ,D79
V131628	D BAW62 SW D035	D19 ,D20 ,D21 ,D22 ,D23 ,D24 , D25 ,D26 ,D27
V131757	D ZEN 3V9 OW5 C 0035	D13
V131758	D ZEN 15V aws C D035	D1 ,D2 ,D3 ,D4 ,D5 ,D6
V132194	U 072 TL DIPS P	U20
V132504	Q 2N2369A N SS TO18	Q244
C1325146	Q BF869 N P T0202	Q38 ,Q43 ,Q48
V132516	Q BF422 N SS TO92	Q39 ,Q44 ,Q49
V132552	Q BF423 P SS TO92	Q40 ,Q45 ,Q50
V132575	Q BC517 DN SS TO92	Q15
V134018	U 431C TL TO92 P	U21
V137377	U 4538B DIP16 P	U19
V137395	U 4098B DIP16 P	U16 ,U3 ,U4 ,U6
V1374174	U 74LS174 DIP16 P	U27
V137508	0 7407 DIP14 P	U22 ,023 ,U24
V137513	U 74ALS574 DIP20 P	U25 ,U26
C137700	U 4053B DIP16 P	Ul ,U13 ,U14 ,U17 ,U18 ,U28 , U7 ,U8 ,U9
V137719	U 2595 TDA DIP18 P	U2
V137721	U 4510 TDA DIP16 P	U15
V137725	U 3507 TDA DIP28 P	U12
V1407103	R AB 6 10K G OW2 SIP7	RA1 ,*RA2* ,RA3
V1510221	R AI 5 220E G OW3 SIP10	RA4 , RA5
V306004	CH RA ES 3.3 UH S7 T	L3
V306005	CH RA ES 4.7 UH S7 T	L1 ,L7
V306007	CH RA ES 10 UH S7 T	IA ,L5 ,L6
V3060082	CH RA ES 12X2 UH S7 T	L2

Order number	Description		Item
V306100	CH AX NS 9 DR		L14
V3061322	CH AX NS 10 UH		L10
V3061342	CH AX NS 15 UH		Lll ,L12 ,L13
V3061362	CH AX NS 22 UH		R140
V306512	DL 63.943US DL701		DL2
V306531	DL 100NS 1K		DL3
V306538	DL 175NS 1K		DL1
0306816	X 8.867238 MHZ HC43 20		X1
V313100	J BNC FCT P 1 75E LUG		0003
V3131001	J BNC ACC WSHR		0004
V3131002	J BNC ACC NUT		0005
V313392	J MD JMP P 1 ElAU		0002
V313393	J MD1 MBT P 3 ElAU		J1 ,J2 ,J3
V3133931	J MD1 MBT P 2 ElAU		J4 ,J5
C313590	J EUR3C MS P32 E1C2 S1.6		JA ,JD
V3137820	J CT MBT P10 M2SN		J6
V315311	J RVT MBT D 1.3=3		J6 ,J7 ,J8
V324151	SW SID JSA 1C BS		S1 ,S2 ,S3
V5627109	ACC UNIT V3	00	Refer to separate parts list
V602092	J BNC ACC FIX	00	N1 ,N2
V6020921	SUPPORT BNC WITH HOLE	00	N3
V602950	TESTPIN	00	TP ,TP1 ,TP10,TP13,172 ,TP21, TP22,TP23,TP24,TP26,TP27,TP29, TP3 ,TP30,TP31,TP32,TP33,TP34, TP35,TP36,TP37,TP38,TP40,TP42, TP44,TP45,TP46,TP47,TP5 ,TP7 , TP8
V7123023	D 7 XD 3.25BAK0.50	02	0017
V752147	PC PAL/RGB CVM20XX	02	PCB1
V775164	CHOKE AX 0.5 51.0UH	01	L8 ,L9

NTSC DECODER & RGB AMPLIFIER

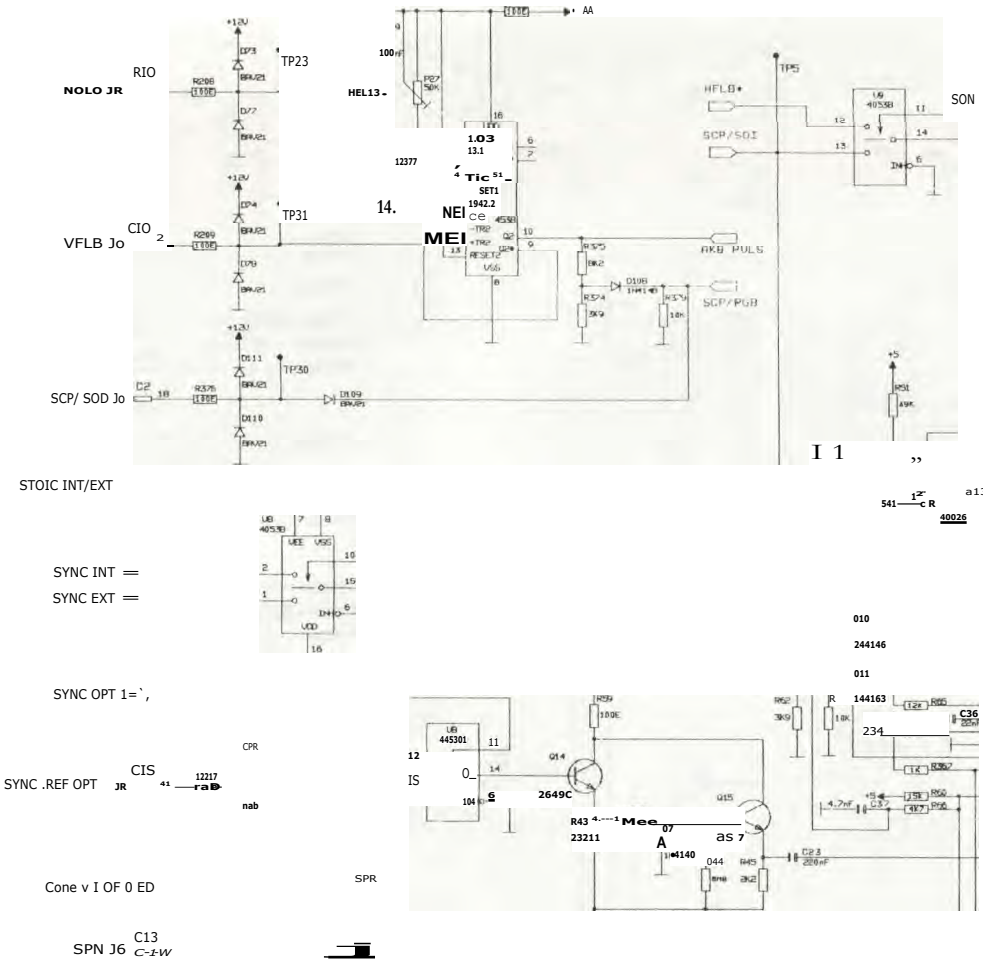


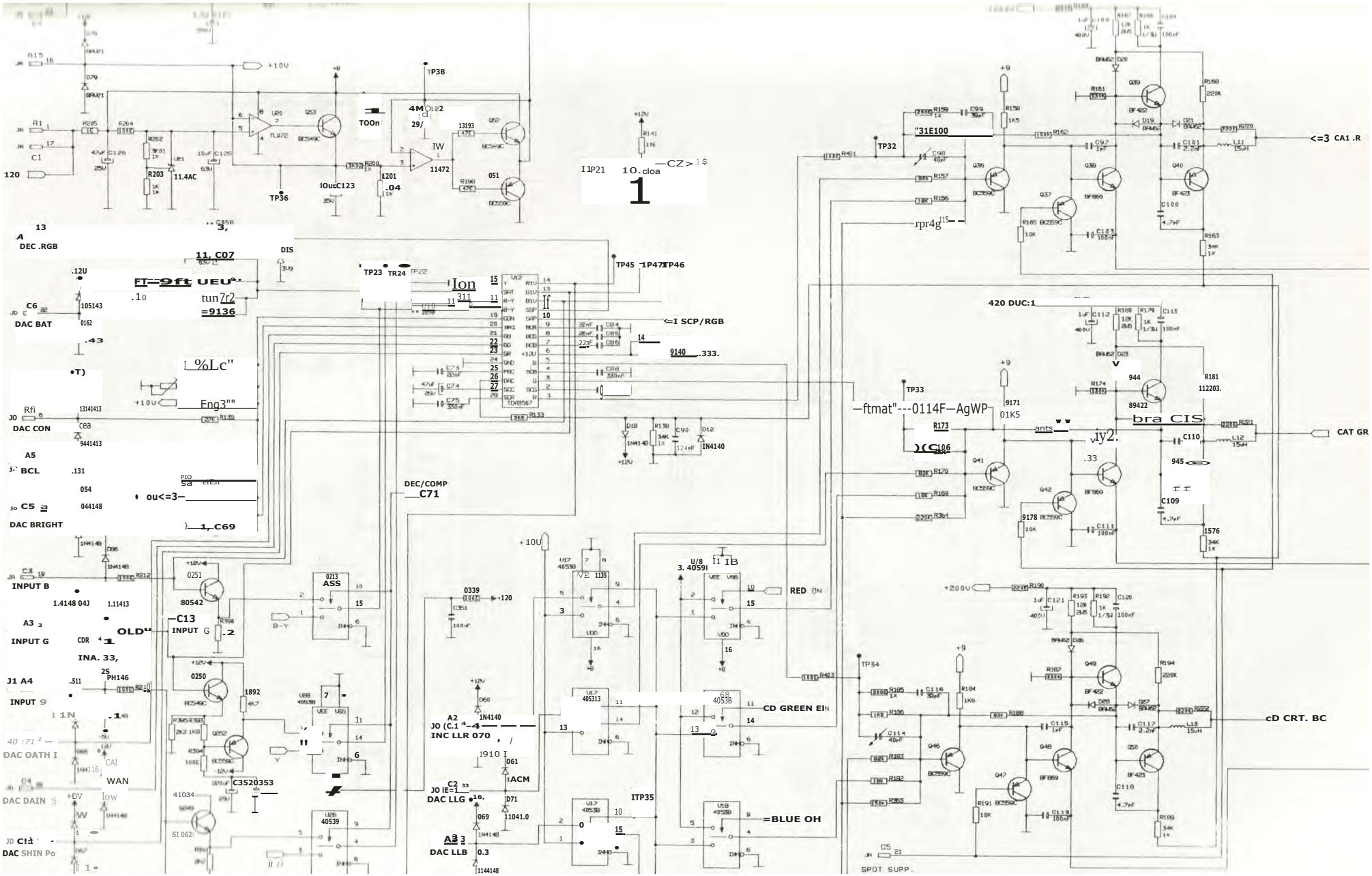


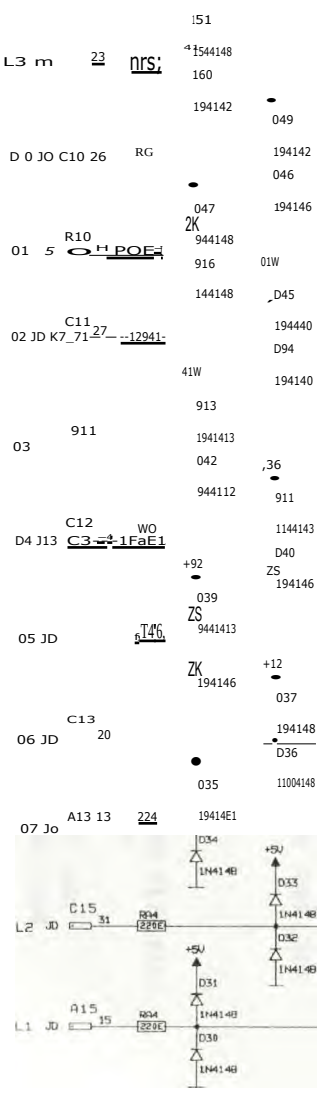
NTSC DECODER&RGBAMPLIFIER

SHEET 1 OF 4 INPUT AND DECODING

V5628326 MODIFICATIONS RESERVED 290591


RIO
TP23
TP31
CIO
VFLB Jo
SCP/ SOD Jo
TP30
HFLB*
SCP/SOI
SCP/PGB
SON
STOIC INT/EXT
SYNC INT
SYNC EXT
SYNC OPT 1=`,
SYNC .REF OPT
CIS
CPR
Cone v I OF 0 ED
SPR
SPN J6
C13
HGYNC
US YNC
NTSC DECODER ROB AMPLIFIER
SHEET 2 OF 4 SYNC PROCESSING
V5628326 MODIFICATIONS RESERVED 290591


DEC .RGB
DAC BAT
DAC CON
DAC BRIGHT
DAC DAIN
DAC SHIN Po
DAC LLG
DAC LLB
INPUT B
INPUT G
INPUT G
INPUT 9
DAC OATH I
DEC/COMP
C71
ORB PULS ED
RED DN
CD GREEN EIN
=BLUE OH
ITP35
SPOT SUPP.
CAT GR
cD CRT. BC
NTSC DECODER & RGB AMPLIFIERS
SHEET 3 OF 4 RGB OUT AMPLIFIER
V5628326 MODIFICATIONS RESERVED 290591



NTSC DECODER & RGB AMPLIFIER

SHEET 4 OF 4 DIGITAL PART

V5628326 MODIFICATIONS RESERVED 290591

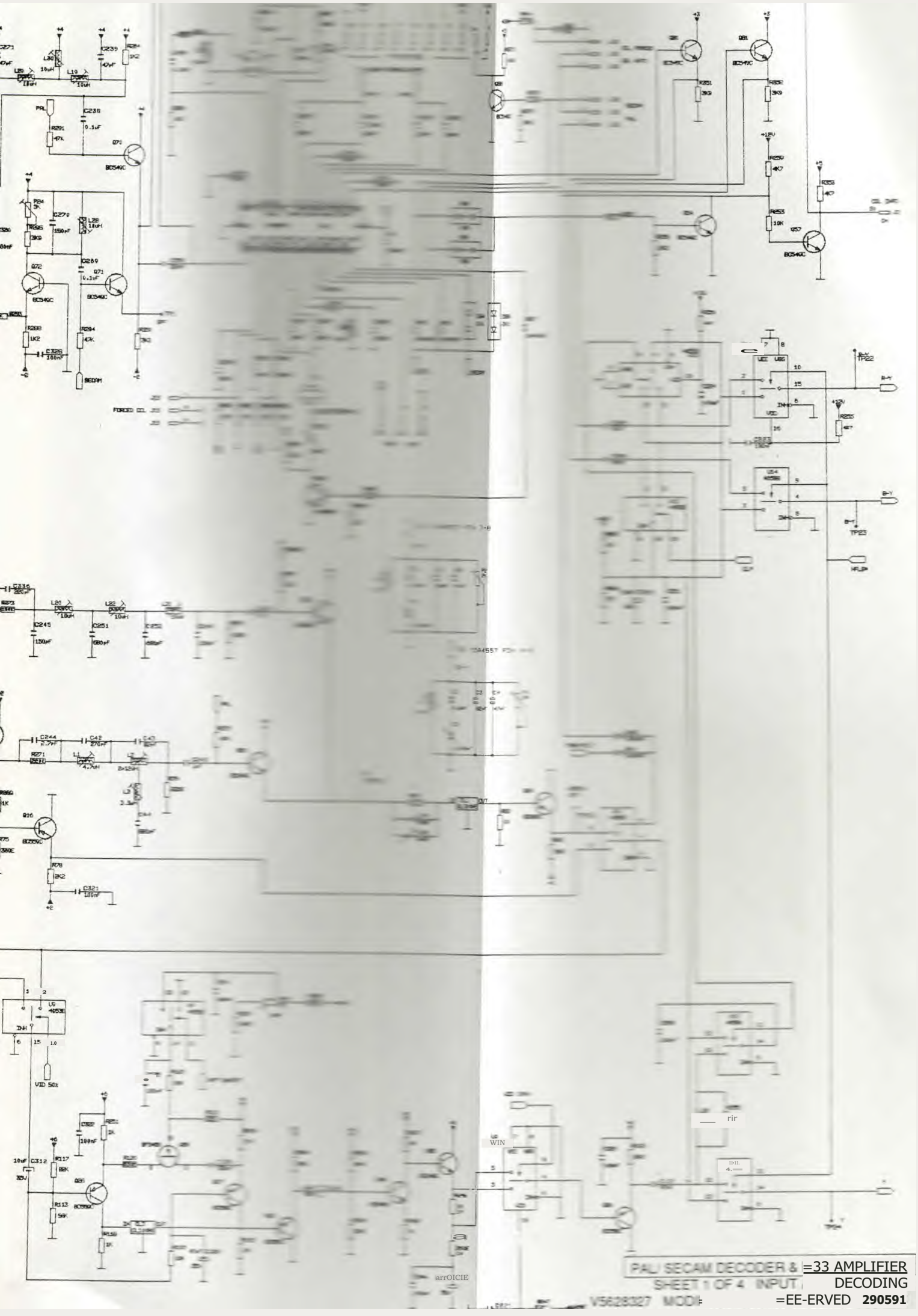
PARTS LIST
NTSC DECODER & RGB AMPLIFIER
Order number of a complete board : V5628328

Order nurriber	Description	Item
C1011289	R CFFH220E J OW25	R164,R177,R190
V1011369	R CFFH 1K J OW25	R166,R179,R192
V101200	R MF H 1E J OW5	R159,11205
V101212	R MF H 10E J OW5	R141,R144,R207,R42 ,R67 ,R73
V101216	R MF H 22E J OW5	R14 ,R27 ,R40
V101220	R MF H 47E J OW5	R198,R199
V101221	R MF H 56E J OW5	8105
V1012231	R MF H 75E J OWS	R10 ,R23 ,1136
V101224	R ME' H100E J OW5	R103,R126,R204,R208,R209,R210, R211,R212,R217,R369,R372,R373, R376,R389,R394,R53 ,R55 ,R59 , R11 ,R72 ,R74 ,R86 ,R95
V101226	R ME' H150E J OW5	R19 ,R32 ,R4
V101227	R MF H180E J OW5	R401,R402,R403
V101228	R ME' H220E J OW5	R1 ,R12 ,R16 ,R18 ,R206,R25 , R29 ,R3 ,R31 ,R38 ,R77 ,R79
V101229	R HF 11270E J OW5	R101
V101230	R ME' H330E J OW5	R106,R98 ,R99
V101231	R MF H390E J OW5	8220
V101232	R ME' H470E J OW5	R110,R124,R15 ,R93
V101233	R ME' H560E J OW5	8104
V101234	R ME' H680E J OW5	R49
V101235	R ME' H820E J OW5	R137,R48
V101236	R ME' H 1K J OW5	R11 ,R111,R119,11120,R122,R123, R13 ,R142,R143,R147,R24 ,R26 , R37 ,R383,R39 ,R399,R83 ,R84 , R90
V101237	R MF H 1K2 J OW5	R92
V101238	R MF H 1K5 J OW5	R158,R163,R171,R176,R184,R189, R9
V101239	R MF H 1K8 J OW5	R393,R404,R408
V101240	R MF H 2K2 J OW5	R107,R115,R139,R22 ,1135 ,R382, R387,R388,R390,R391,R395,R396, R397,R400,R43 ,R45 ,R64 ,R7 , RBO ,R85
V101241	R MF H 2K7 J OW5	R148,R222,R384
V101242	R MF H 3K3 J OW5	R374
V101243	R MF H 3K9 J OW5	R150,R21 ,R221,R34 ,R6 ,R62
V101244	R MF H 4K7 J OW5	R128,R154,R214,R370,R380,R392, R398,R50 ,R66 ,R78 ,R89 ,R94 , R97
V101245	R MF H 5K6 J OW5	8133
V101246	R MF H 6K8 J OW5	R127,R129
V101247	R MF H 8X2 J OW5	R375,R61
V101248	R ME' H 10K J OW5	R116,R117,R149,R165,R178,12191, R368,R371,R379,R63
V101249	R MF H 12K J OW5	R47 ,R65
V101250	R ME' H 15K J OW5	R20 ,R33 ,R5 ,R60 ,R81
V101251	R MF H 18K J OW5	R146,R156,R169,R182,R406
V101252	R MF H 22K J OW5	R121,R125,R131
V101254	R MF H 33K J OW5	R102,R109
V101255	R HF H 39K J OW5	R108,R15 ,R17 ,R2 ,R28 ,R30 R41 ,R51 ,R52 ,R69
V101256	R MF H 47K J OW5	R100,R130,R136,R411,R68 ,R82
V101257	R MF H 56K J OW5	R118
V101259	R MF H 82K J OW5	R135,R157,R170,R183,R377
V101260	R MF H100K J OW5	R162,R175,R46
V101261	R MF H120K J OW5	R58
V101262	R MF 11150K J OW5	R134,R365

Order number	Description	Item
V101264	MF H220K J OW5	R168,R181,R194,R364,R57
V101266	MF H330K J OW5	R161,R174,R187,R363
V101282	*MF* H 6M8 *J* 0W5	R44
V101534	*MF* H680E F OW4 E2	R407
V101538	ME' H 1K5 F OW4 E2	R76
V101544	MF H 4K7 F OW4 E2	R412,R413,R414
V101545	R ME' H 5K6 F OW4 E2	R405
V101548	MF H 10K F OW4 E2	R410
V101560	Mr H100K F OW4 E2	R409
V102336	ME' H *1K J 2W5*	R215,R216
V1023481	MF H 12K J 2W5	R167,R180,R193
V1026006	R MF H 1K F OW6	P203
V1026146	R MF H 1K4 F OW6	R91
V1026206	R Mr H IK62F OW6	R160,R173,R186
V1026256	R Mr H 1K82F OW6	8112
V1026295	MF H200E F	R114,R172,R185,R87 ,R88
V1026377	R Mr H 2473 F OW6	R70
V1026466	ME'H 3KO1F OW6	R202
V1026517	MF H 34K F OW6	R138
V1026576	R MF H 3K92F OW6	R200
V1026680	R MF H 5Ki1F	R145
V1026687	MF H 51K1 F OW6	P132
V1026756	MF H 6K04F OW6	P201
V1026816	Mr H 6K9EF OW6	8155
V1026823	MF H 71K5 F OW6	R188
V106732	R TCE H 50K K airs SlOTS	P1 ,P26 ,P27
V106826	TCE V 1K K OW5 SlOSS	P28
V106827	R TCE V 2K K OW5 SlOSS	P12
V106828	TCE V 5K K OW5 SlOSS	P9
V106829	TCE V 10K K OW5 SlOSS	P10 ,P11
V107005	TCE H500E M OW5 S7 TS	P3 ,P4 ,P5 ,P6
V107007	TCE H 2K M OW5 S7 TS	P7 ,P8
V107008	TCE H 5K M OW5 S7 TS	P2
V1114169	C EL RA 10M M350E2 105	C127
V111474	C EL RA IM M400E2 105	C105,C112,C121
V111477	C EL RA 100M M 25E2 85	C102,C147,C344,C347,C87
V1114789	C EL RA 220M M 25E2 85	C342,C352
V1114855	C EL RA 22M M 50E2 85	C143
V111494	C EL RA 10M M 63E2 85	C45
V1115109	C EL RA 22M M 25E2 105	C68
V1115119	C EL RA 47M M 25E2 105	Cl ,C122,C126,C129,C17 ,C31 , C38 ,C46 ,C55 ,C64 ,C66 ,C74
V1115319	C EL RA 10M M 50E2 105	C123,C125,C356,C60 ,C63 ,C67
V1115469	C EL RA M 50E2 105	C69
V1115509	C EL RA 4M7M 63E2 105	C28
V111679	C EL BRA 10M M 25E2 85	C12 ,C15 ,C20 ,C3 ,C7 ,C9
V1122191	C NPO MI 12 G500E2	C107,C115,C97
V112226	C NPO MI 4P7C 63E2	C100,C109,C118
V112232	C NPO NM 15P G 63E2	C116
V112233	C NPO MI 1TP G 63E2	C345
V112235	C NPO MI 27P G 63E2	C360
V112237	C NPO NI 39P G 63E2	C142
V112239	C NPO MI 56P G 63E2	C99
V112240	C NPO MI 68P G 63E2	C51
V112241	C NPO MI 82P G 63E2	C43 ,C58
V112243	C NPO MI 120P J 63E2	C39 ,C40 ,C90
V1122510	C COG MD 1N J100E2 125	C358
V112277	C N150MI 39P G 63E2	C108
V112362	C N750MI 100P G 63E2	C338
V112365	C N750MI 180P G 63E2	C50 ,C53
V112366	C N750MI 220P G 63E2	C140,C363,C364,C365,C42
V112368	C N750MI 330P G 63E2	C359,C49 ,C52 ,C65
C112743	C CE MI 2N2K 63E2	C101,C110,C117,C14 ,C2 ,C8

Order nmdcer	Description	Item
C112747	C CE NM 4N7K 63E2	C25 ,C37
V1127830	C X7R MU 100N K 50E2 125	C103,C104,C11 ,C111,C113,C119, C120,C124,C18 ,C29 ,C33 ,C339, C34 ,C340,C343,C35 ,C351,C353, C357,C5 ,C56 ,C61 ,C62
V114080	C POMERA 10N K 63E2 85	C128,C130,C22 ,C27 ,C30 ,C341, C54
V114082	C POMERA 22N K 63E2 85	C13 ,C131,C132,C135,C136,C19 , C36 ,C6 ,C73 ,C77 ,C78 ,C84 , C85 ,C86
V114083	C POMERA 33N K 63E2 85	C32
V114084	C POMERA 47N K 63E2 85	C134
V114088	C POMERA 100N K 63E2 85	C362,C57 ,C76
V114090	C POMERA 220N K 63E2 85	C21 ,C23
V114091	C POMERA 330N K 63E2 85	C137,C75 ,C88 ,C89
V114092	C POMERA 470N K 63E2 85	C26
V114096	C POMERA K 50E2 85	C361
V114480	C PO RA 1N M100E2 100	C41 ,C44
V114481	C PO RA 1N5M200E2 100	C10 ,C16 ,C4
C1160505	C PP AX 4N7G160E6 85	C24
V117020	C TV 5 -45P 100	C355
V117024	C TH 4 -40P 100	C106,C114,C138,C48 ,C98
V131411	Q BC549C N *SS* TO92	Q1 ,Q10 ,Q11 ,Q12 ,Q13 ,Q14 , Q17 ,Q19 ,Q2 ,Q21 ,Q22 ,Q23 , Q24 ,Q245,Q246,Q248,Q249,Q250, Q251,Q253,Q254,Q255,Q256,Q26 Q27 ,Q28 ,Q3 ,Q30 ,Q31 ,Q4 Q5 ,Q52 ,Q53 ,Q6 ,Q7 ,Q8 Q9
V1314182	Q BC559C P *SS* TO92	Q16 ,Q18 ,Q20 ,Q25 ,Q252,Q29 , Q32 ,Q33 ,Q34 ,Q36 ,Q37 ,Q41 , Q42 ,Q46 ,Q47 ,Q51
V1314651	Q BF245B FN *SS* TO92	Q35
V1315041	D BAT41 SCH D035	8151,0120
V1315046	D BAT86 SCE D034	D109,D114
V1316211	D 1N4148 SW D035	D10 ,D106,D107,D108,D11 ,D12 , D14 ,D18 ,D30 ,D31 ,D32 ,D33 , D34 ,D35 ,D36 ,D37 ,D38 ,D39 , D40 ,D41 ,D42 ,D43 ,D44 ,D45 , D46 ,D47 ,D48 ,D49 ,D50 ,D51 , D52 ,D53 ,D54 ,D55 ,D56 ,D57 , D59 ,D60 ,D61 ,D62 ,D63 ,D64 , D65 ,D66 ,D67 ,D69 ,D7 ,D70 , D71 ,D8 ,D81 ,D82 ,D83 ,D84 , D85 ,D86 ,D9
V131627	D BAV21 SW D035	D110,D111,D72 ,D73 ,D74 ,D75 , D76 ,D77 ,D78 ,D79
V131628	D BAW62 SW D035	D19 ,D20 ,D21 ,D22 ,D23 ,D24 , D25 ,D26 ,D27
V131757	D ZEN 3V9 OW5 C D035	D13
V131758	D ZEN 15V OW5 C D035	D1 ,D2 ,D3 ,D4 ,D5 ,D6
V132194	U 072 TL DIP8 P	U20
V132504	Q 2N2369A N SS TO18	Q244
C1325146	Q BF869 N P T0202	Q38 ,Q43 ,Q48
V132516	Q BF422 N SS T092	Q39 ,Q44 ,Q49
V132552	Q BF423 P SS TO92	Q40 ,Q45 ,Q50
V132575	Q BC517 DN *SS* TO92	Q15
V132756	U 4570 TDA DIP16 P	U15
V1330145	Q ACC MNTG PAD TO18	0060
V134018	U 431C TL TO92 P	U21
V137377	U 4538B DIP16 P	U19
V137395	U 4098B DIP16 P	U16 ,U3 ,U4 ,U6
V1374174	U 74LS174 DIP16 P	U27

Order number	Description		Item
V137508	U 7407 DIP14 P		U22 ,U23 ,U24
V137513	U 74ALS574 DIP20 P		U25 ,U26
C137700	U 4053B DIP16 P		U1 ,U11 ,U13 ,U14 ,U17 ,U18 , U28 ,U7 ,U8 ,U9
V137719	U 2595 TDA DIP18 P		U2
V137725	U 3507 TDA DIP28 P		U12
V1407103	R AB 6 10K G OW2 SIP7		RA1 ,RA2 ,RA3
V1510221	R AI 5 220E G OW3 SIP10		RA4 , RA5
V306004	CH RA ES 3.3 UH S7 T		L3
V306007	CH RA ES 10 UH S7 T		L1
V3060083	CH RA ES 12X2 UH S7 T		L2
V306009	CH RA ES 15 UH S7 T		L6 ,L7
V306100	CH AX NS 9 UH		L14
V3061282	CH AX NS 4.7 UH		R96
V3061342	CH AX NS 15 UH		L11 ,L12 ,L13
V3061362	CH AX NS 22 UH		8140
C306526	DL 63.555US DL750		DL2
V306531	DL 100NS 1K		DL3
V306537	DL 300NS 1K		DL1
V3065371	DL 300NS 200E DIP		DL4
V306800	X ACC INSUL HC49		0180
V306811	X 7.159090 MHZ HC43 20		X1
V313100	J BNC FCT P 1 75E LUG		0030
V3131001	J BNC ACC WSHR		0035
V3131002	J BNC ACC NUT		0040
V313392	J MD JMP P 1 E1AU		0010
V313393	J MD1 MBT P 3 E1AU		J1 ,J2 ,J3
V3133931	J MD1 MBT P 2 E1AU		J4 075
C313590	J EUR3C MBS P32 E1C2 S1.6		JA ,JD
V3137820	J CT MBT P10 M2SN		0160
V315311	J RVT MBT D 1.3L13		J6 ,J7 ,j8
V324151	SW SLD JSA 1C BS		S1 ,S2 ,S3
V5627109	*ACC* UNIT V3	00	Refer to separate parts list
V602092	*J* BNC ACC FIX	00	N1 ,N2
V6020921	SUPPORT BNC WITH HOLE	00	N3
V602950	TESTPIN	00	TP ,TP1 ,TP10,TP11,TP13,TP15, TP16,TP17,TP19,TP2 ,TP20,TP21, TP22,TP23,TP24,TP25,TP26,TP27, TP29,TP3 ,TP30,TP31,TP32,TP33, TP34,TP35,TP36,TP37,TP38,TP40, TP44,TP45,TP46,TP47,TP48,TP49, TP5 ,TP50,TP51,TP52,TP7 ,TP8
V7123023	D 7 XD 3.25BAK0.50	02	0170
V752148	PCB NTSC CVM2000	01	PC B1
V775040	COIL WH -RED -BLA-BLA	**	L4 ,L5
V775164	CHOKE AX 0.5 51.0UH	01	L8 ,L9


PAL/ SECAM DECODER &
SHEET 1 OF 4 INPUT
=33 AMPLIFIER
DECODING
=EE-ERVED 290591